The influence of peers and family on the everyday life information seeking behaviour of family groups and social networks.

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Declaration and Statements

Word Count of thesis: .....

DECLARATION

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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Thesis Summary

This thesis explores the information seeking behaviour of individuals within both family and social networks in Ceredigion. The research aims to establish what information seeking behaviour is employed by different age groups and explore generational differences in information seeking behaviour. Exploration of the causes of these differences will consider whether there are changes to an individual's information seeking behaviour throughout their life cycle and enable the consideration of how the information seeking behaviour relates to Foster's non-linear evolutionary framework.

Although there is a vast literature on information seeking behaviour, to date, no studies have concentrated specifically on generational differences or longitudinal changes to information seeking behaviour. This research will have important implications for informing government policy in the area of future information dissemination methodology and advancing the knowledge within the information behaviour discipline.

A qualitative approach was taken, with the principal method of data collection being semi-structured interviews, based on an interview guide and a short questionnaire to collect factual demographic data. The aim was to interview individuals of different age groups, in order to identify any life cycle changes to the information seeking behaviour, influences and any generational differences in information sources or behaviours that emerge from the interviewing. The analysis entailed both qualitative and quantitative techniques. Interview transcripts and questionnaire responses were analysed on a continuous basis, throughout the process of data collection, using QSR NVivo 10 software.

Results showed that all the study participants sought and obtained their information in similar ways; using mainly internet resources as well as referring to people they knew. The results also showed that there are differences in influence and information use across the generations. Additionally, this research has given rise to a potential new type of information, Disposable Information and Disposable Information Seeking Behaviour for one off instances of information.

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“Little minds are interested in the extraordinary; great minds are interested in the commonplace.”

Elbert Hubbard.

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Contents

List of Figures

List of Tables

List of Abbreviations

CAT	Centre for Alternative Technology, Machynlleth
CRAFT	Specialist shop in Aberystwyth which recycles and reuses items which would otherwise go to landfill
ELIS	Everyday Life Information Seeking
HIB	Human Information Behaviour
HISB	Human Information Seeking Behaviour
LIS	Library and Information Science
NRES	National Research Ethics Service
OED	Oxford English Dictionary
OPAC	Online Public Access Catalogue
WAG	Welsh Assembly Government
WRAP	Waste & Resources Action Programme

Chapter One: Introduction

1.1 Introduction to the research discipline

Human Information Seeking Behaviour [HISB] is a diverse and interactive process. There are necessarily many definitions of information seeking and information seeking behaviour such as that of Foster and Urquhart who describe information seeking as being of a *"… dynamic and nonlinear nature."* (2012, p. 784) Case states that *"Information seeking is a conscious effort to acquire information in response to a need or gap in your knowledge."* (2002, p. 5), while Marchionini and Komlodi define information seeking as *"… a process in which humans engage to purposefully change their state of knowledge. The process is inherently interactive as information seekers direct attention, accept and adapt to stimuli, reflect on progress, and evaluate the efficacy of continuation".* (2001, p. 6/25) Kuhlthau states that the information seeking process *"… is the user's constructive activity of finding meaning from information in order to extend his or her state of knowledge on a particular problem or topic."* (1991, p. 361) Diamond *et al.* define information behaviour as "… *activity relating to the acquisition and use of information.*" They go on to say that it is "… *influenced by a range of factors including personal and psychological traits, as well as social and environmental conditions*." (2014, p. 4)

Human Information Behaviour [HIB] research is expanding at present, and different perspectives are being explored. This study explores one of the less researched contexts of HIB, everyday life information seeking behaviour [ELIS] within the social networks of families and peer groups.

Savolainen defines everyday life information seeking as *"… the acquisition of various informational (both cognitive and expressive) elements which people employ to orient themselves in daily life and solve problems not directly associated with the performance of occupational tasks."* (1995, pp. 266 - 267)

1.2 Scope and rationale

This study examined whether information behaviour within households, and among the social networks of the household members, changes according to age and social network. The focus of the information behaviour was awareness and use

of information about environmental and recycling issues in Ceredigion that may influence household actions.

Previous studies (Agosto and Hughes-Hassell 2005; Cooper 2004; Kuhlthau, 1993; Savolainen 2005; Spink 2004; Spink and Cole 2006.) have focused on how information seeking behaviour changes according to the type of task or for particular purposes, but little research has concentrated specifically on generational differences in information seeking behaviour.

As stated above, one of the problems under investigation is how individuals are influenced by their peers, family/household and any other personal (internal or external) factors. Internal or external factors can range from individual learning style, mood, to time constraints. Other factors may include a need to find information for a particular reason or task, such as intrinsic or extrinsic motivation. (Heinström, 2000; Foster, 2004; 2005 and 2006; Foster and Urquhart 2012; Julien and Michels, 2004.) These factors have been identified in the studies and some further analysis will be considered as part of this research, in relation to applying and testing Foster's 2004 nonlinear information seeking behaviour model. There is literature related to influence in media studies, but this research was not considered here as this study was focussed on individuals and their immediate social contacts, rather than on the wider influences of marketing and media in general.

Studies such as that by Haralambos and Holborn (2004) have examined the changes over the last century to the ways in which families and households live and interact. Due to these changes, this research will focus on household units and the relationships between households, rather than on families, in order not to exclude any potential participants who do not live within a "family" household. Many households still comprise family units, and the make-up of the household environment may impact on how an individual seeks information, in the same way as their peers may influence them either positively or negatively. For the purposes of this study, a household will be made up of the set of individuals who reside in the home.

This chapter will outline the central research question and intended outcomes, including the intended contribution to knowledge. The research question will then be subdivided, as the research design, epistemology and methodology are discussed.

Therefore the central research question for this PhD is:

> "What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?"

The reason for this question is that no research has definitively considered the information behaviour of similar individuals at different points in the life cycle, e.g. late school to adult age (16 - 40), middle age (41-55), older people (55 and more). This study has considered the age groups in terms of "Generations": "children" are Generation 3, "parents" are Generation 2 and "grandparents" are Generation 1. Any individual study has tended to focus on one age group, or presented demographics as an incidental function of information behaviour. No research has examined in depth the comparative influences of family, friends and peer group on information behaviour (although there are individual studies that contribute part of the picture).

With government initiatives to encourage greater use of online information services such as direct.gov, the introduction of e-health services (to encourage the public to take more responsibility for adopting a healthy lifestyle), support structures to promote that use need to be informed by evidence on what works best. There is anecdotal evidence for the influence of peer groups and learning within the family (Vickery, 2000). Much money could be spent by governments on supporting initiatives on such groups as 'silver surfers' without realising that reverse mentoring of grandparents by IT literate grandchildren might be equally effective, and happening without any need for intervention. The evidence for the effectiveness of health promotion initiatives (e.g. interventions to prevent obesity in children (Summerbell *et al.* 2005)) is limited and the findings of that systematic review suggest that health information use and uptake is very complex within the family setting.

The research has scope to contribute to theoretical advances in the discipline but there are practical applications to policymaking in other sectors. Government policies for combating social exclusion, promoting lifelong learning and employability, and ensuring that the population adopt healthier lifestyles do all at least partly depend on people being aware of the information they need to find, locating it successfully and using it. Understanding more about the ways in which people access and use information will also assist in these policy decisions.

1.3 Research Aims and Objectives

The purpose of the research was to develop a better understanding of the influence of two close social networks (family and peer group members) on information behaviour. Particularly as this influence applies to changes in patterns of individual information seeking and use, reinforcement of information seeking habits, sharing of information, or learning of skills that may depend on new information and communication technologies. This research considered use of different types of information (visual, textual, audio, and numerical), as well as use of different technologies and how different influences affect the way information is sought, considered, and used. The central research question for this PhD is:

"What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?"

The theoretical requirements of this research were to identify the information behaviour of individuals at different points in the life cycle and relate this to the Nonlinear-Evolutionary framework, in particular comparing the effects of family or household influences and of peer group influences.

Several areas of research were explored in depth. These were broken down into subsidiary questions to the main Research Question, as follows:

What influences the initial information seeking?
For what purposes is information sought?
What sources are used?
How is information sought? A detailed breakdown of methods.
How is the retrieved information used?
What influences information seeking behaviour?
How does this impact on information seeking behaviour?

These were interesting questions to explore as they help to inform research in the discipline about how information seeking evolves across lifespan. It was anticipated that there would be differences in the style of information seeking across generations, which were also to be compared and analysed.

The intention of this research was to explore the Nonlinear-Evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group. Information seeking behaviour is difficult, if not impossible, according to Johnson *et al.* (2006), to separate from the reason why the information is being sought, as it is very context specific.

Information behaviour research has not been good at replication and validation of methodologies and methods, as suggested by Lincoln and Guba (1985). This is in part due to qualitative interviews being difficult to replicate, as even asking identical questions at a second interview with a previously interviewed participant is likely to lead to different answers, depending on their recent life experiences. This research builds on the work of an existing research community within the department.

To answer the Research Question the following Research Aim was defined:

Explore the Nonlinear Evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group.

The Nonlinear Evolutionary Framework is the theory that Human Information Seeking Behaviour evolves over a person's life and information seeking events, rather than remaining as a specific set of steps that are followed each time the person seeks information. (See Section 2.10 and Foster 2004, 2005, 2005a; and Foster and Urquhart 2012, for more details.) Relating real world behaviours to the framework required qualitative and quantitative analysis.

To fulfil the Research Aim the following Research Objectives were formulated:

Objective Number	Objective
1	Explore information seeking influences through examination of information seeking incidents in the family or household setting.
2	Identify individual information seeking behaviour as it relates to environmental and recycling issues.
3	Identify sources of information used for passive and active information seeking by individuals.
4	Identify generational differences in information seeking

	behaviour and examine intra-generational nature, extent and influence of information transactions between different generations of network members.
5	Identify and examine what influence inter-generational differences and linkages have on information seeking behaviour.

In order to fulfil the Research Objectives interviews were conducted to determine the information behaviour of a sample population. These were semi-structured interviews which concentrated on specific occasions where the participants had sought information on the environment or recycling. The interviews were recorded and fully transcribed. The transcriptions were then made anonymous and analysed using QSR NVivo10 software. The interviewing process is covered in more detail later in this chapter.

1.4 Methods used

As stated above, the principal methodology was interviewing people to determine their Information Behaviour. The interviews were semi-structured "critical incident" type interviews, discussing a recent incident where information seeking was required. The information seeking events to be investigated were restricted to environmental and recycling issues. This was to enable participants below the age of eighteen to be involved in the research. The researcher examined how the information seeking problem emerged, how it was discussed or considered by the household, and how the information seeking incident proceeded. The methodological approach will be informed by research by Johnson *et al.* (2006) on fields versus pathways as views on information seeking. A person's information field is the physical area of their information network – the sources of information they regularly use to seek information. Sonnenwald *et al.* (2001) refers to this construct as a person's information horizon. An information pathway will always start within the more static information field, but is usually dynamic and uses a particular route to obtain answers to a specific information need.

The researcher intended to target a core group of approximately 10 – 15 households which have upper secondary school or sixth form college-aged children, plus grandparents or older close relatives and possibly peers of some or all household members. Once the households were selected, they were interviewed to determine the Human Information Behaviour being used for specific events. This

method should ensure that the target age groups as detailed above are included in the sample. (It will need to be borne in mind that some households may move within the investigation period, and may only be interviewed once.) This research does have some ethical implications, which are discussed further below.

These interviews were then analysed and conclusions drawn. QSR NVivo 10 software was used in the analysis of the interview data - this software helped to round out the research and provide additional insights. The analysis was conducted on an on-going basis, throughout the duration of the period of data collection. As stated above, differences in generational information seeking behaviour would be compared and analysed**.** It is possible that information technology may play a significant part in these anticipated differences.

A naturalistic inquiry approach was taken. Qualitative methods were used – semi-structured, critical incident technique interviews were conducted, digitally recorded and fully transcribed. The transcripts were then analysed using QSR NVivo 10 software. In addition the transcripts were coded to identify both frequency and relevance of the social network linkages and to delineate both network usage and impact of contacts. Some quantitative analysis of the participant's personal data was also performed using Microsoft Excel software to demonstrate the demographic information. Quantitative analysis was also used on the social network analysis aspects of the research, to assess the individual relationships within the social networks, to test out the strong and weak ties of the household and peer groups.

The sample for interviewing was drawn from local community groups already known to the researcher and some self-selection using the University's weekly email to request the involvement of additional interested participants. These two recruitment methods enabled purposive building of a representational sample of age and socio-economic groups.

Informed consent was obtained in writing from all participants. In the case of participants aged under eighteen, written parental consent was also obtained. All participants were given an information sheet and a consent form to read and complete either before or at initial consultation stage. These were initially drafted according to the guidance given on the National Research Ethics Service website and the final versions are included as Appendices One, Two and Four. Participants were informed that they could withdraw at any stage of the research.

The research was focused on household and family networks, so the only 'vulnerable group' to be interviewed were 16 – 17 year olds. Persons interviewed within this age group gave their own written consent in addition to a consent signed by their parents, as stated above. Interviews with 16 - 17 year olds were conducted with a third party present, in a suitable public space although topics to be covered were limited to information seeking behaviour regarding environmental issues and were thus not considered to be sensitive. Students in university accommodation were excluded from the target population, as this group are not permanently resident, however students who are full time residents of this area were considered for inclusion in the study.

Interviews were conducted in public places such as the University's Arts Centre Café, where confidentiality could be achieved without compromising the safety of either the researcher or interviewees. Telephone or internet chat interviews were offered for any participants who preferred not to be interviewed in a public space.

The semi-structured interviews were conducted based on an interview guide and best practice for critical incident technique interviews. The interviews were audio-recorded and fully transcribed for analysis. Demographic information and relationship network records were also documented to enable analysis of these data.

Participants were offered the option of access to their interview transcripts for review at an early stage and have been offered access to an electronic copy of the completed thesis once the research is finished and fully examined.

The collected information has been safeguarded in accordance with Aberystwyth University policies and the relevant Data Protection and Freedom of Information Acts to ensure confidentiality is preserved. The information published in the thesis has been anonymised. Questionnaires and interviewees were given a coded number, and individuals are not referred to by their own names or anything which could otherwise identify them. Demographic information collected was used to explain and define the parameters of the population sample. The original paper copies with identifying details have been stored separately to all other documents, in a locked filing cabinet. Interview recordings will be destroyed once the research has been fully examined.

The research will inform e-government and social welfare policies and will contribute to the theoretical debate within the research discipline of human information seeking behaviour.

1.5 Thesis structure

This thesis consists of seven chapters, with a chapter breakdown as follows:

- Chapter One Introduction to discipline: This chapter has covered details of the general field, the aims and objectives of the research, including the research question and intended research outcomes.
- Chapter Two Literature Review: A thorough examination of the existing literature in the discipline, relating the literature to the research.
- Chapter Three Methodology: An explanation of the research methods that were used, some discussion of the ethical issues involved and their solutions, and a rationalisation for the methods.
- Chapters Four to Six, Results and Analysis: Since the main data collection method will be via interviews, these chapters will give details of the interviews undertaken and their data outcomes in themed chapters
    - Four - Information Sources
    - Five - Information Seeking Behaviour Themes and Habits
    - Six - Influences on Information Seeking
- Chapter Seven Discussion and Conclusions: This chapter will review and analyse the collected data and relate this back to the main research question.

Finally, conclusions will be drawn from the data, summarising the answer to the primary research question and allowing consideration of possible future research, as well as outlining any limitations within the research.

Chapter Two: Review of the Literature

2.1 Introduction

This chapter provides a critical review of the available literature. A search strategy was devised to ensure that the research literature was fully accessed and that the search remained focused on topic. There is a large amount of literature on the subject of information seeking and it was necessary to define some parameters for the search. These are discussed further below.

2.1.1 Search strategy

A series of keywords and phrases were identified and then used in various search engines, library catalogues and online resources to find appropriate literature for review. Boolean searches were also used, along with searches for works by particular authors. The main sources used for the literature search included the Aberystwyth University library Online Public Access Catalogue (OPAC), PRIMO; The National Library of Wales OPAC; and Google Scholar. Table of Contents alerts for relevant journals and Google Scholar alerts were also set up for various key word searches, which allowed for newly indexed materials to be emailed as they became available.

Chaining and pearl growing searches were also used. Chaining is a process which moves backwards, using the references cited within a particular work to seek additional materials, while pearl growing is a process starting with a specific relevant item and moving forward with new keyword searches gleaned from this item.

2.1.2 Types of literature

The types of literature used for this literature review included monograph and edited chapter books, journals, websites and online resources, newspaper articles. Journals most extensively used were those from the information science field, and included the following titles: Information Research - an International Electronic Journal; Journal of Documentation; Journal of Information Literacy; Journal of Information Science; Journal of the American Society for Information Science; Journal of the American Society for Information Science and Technology.

Additional journals consulted from outside the information science field directly included: American Journal of Sociology; British Medical Journal; International

Journal of Information Services and Technology; International Journal of Qualitative Methods; Journal of Human-Computer Studies; Quarterly Journal of Economics.

The most important journals in terms of quantity and relevance of literature were those mentioned above, from the information science fields of research.

2.1.3 Sources of literature

The majority of the literature materials used were sourced using the Aberystwyth University library OPAC, PRIMO. Google Scholar and assorted bookshops also provided materials not available via the University.

2.1.4 Search limitations

The literature search encompassed all works deemed relevant by the researcher, so the chronological scope of the works consulted ranged from 1948 to the present time. The majority of the literature reviewed, however, is from the last two decades. Many older monographs and some seminal works, although somewhat dated, are still relevant to the information seeking research of the current time.

The literature search did not identify any works which considered environmental information seeking so this study will partially address this gap in the literature.

There were no geographical limitations placed on literature, due to the availability of material via the internet, although only materials published in English were consulted.

2.2 Introduction to the literature

As stated in the introduction chapter, the research examined how environmental information behaviour within households, and among the social networks of the household members, changes according to age and social network. The focus of the information behaviour was awareness and use of information about environmental and recycling issues in Ceredigion that may influence household actions.

As stated previously, there have been changes over the last century to the ways in which families and households live and interact (Haralambos and Holborn, 2004[1]). This research therefore focused on household units and the relationships between households, rather than on families. The make-up of the household environment may impact on how an individual seeks information, in the same way as their peers

[1] While this text is at an entry level, it is a seminal work in its field and is used here to show a basic knowledge of sociology.

may influence them either positively or negatively. For the purposes of this research, a household will be made up of the set of individuals who reside in the home.

The research question investigated was:

"What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?"

The research aim was to explore the Nonlinear Evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group.

The objectives of the research were to:

1. Explore information seeking influences through examination of information seeking incidents in the family or household setting.
2. Identify individual information seeking behaviour as it relates to environmental and recycling issues.
3. Identify sources of information used for passive and active information seeking by individuals.
4. Identify generational differences in information seeking behaviour and examine intra-generational nature, extent and influence of information transactions between different generations of network members.
5. Identify and examine what influence inter-generational differences and linkages have on information seeking behaviour.

Human information seeking behaviour has been defined by many noted scholars. Kuhlthau says that information seeking *"… is the user's constructive activity of finding meaning from information in order to extend his or her knowledge on a particular problem or topic."* (1991, p. 361) Kuhlthau (2004) describes information seeking as *"… an intellectual process."* (p. 5) She goes on to discuss how the triad of *"… thoughts, actions, and feelings"* (p. 6) are incumbent upon the act of creating meaning while seeking information, suggesting that these factors will influence the information seeking behaviour of an individual. Vakkari defines information seeking as *"… a process of searching, obtaining and using information for a purpose [(e.g. form a solution for a task)] when a person does not have sufficient prior knowledge."* (1998, p. 35) Marchionini and Komlodi meanwhile define information seeking as *"… a process in which humans engage to purposefully change their state of knowledge.*

The process is inherently interactive as information seekers direct attention, accept and adapt to stimuli, reflect on progress, and evaluate the efficacy of continuation." (2001, p. 6/25) While Case states *"Information seeking is a conscious effort to acquire information in response to a need or gap in your knowledge."* (2002, p. 5) Kari and Savolainen summarize information seeking as follows: *"… information seeking is defined as a more or less purposive process in which the individual attempts to find information through information sources in order to satisfy his information need."* (2003, p.162)

Sujatha suggests *"Information seeking behaviour is the purposive seeking for information as a consequence of a need to satisfy some goal"* (2014, p. 11) as a definition, which is influenced by Wilson (2000).

Marchionini and Komlodi's 2001 definition is the one most closely aligned with this research, in that it concurs with Foster's nonlinear model of information seeking, which he says shows *"The interactivity and shifts described by the model show information-seeking to be nonlinear, dynamic, holistic, and flowing."* (2004, p. 235) Foster also states that *"Information seeking was found to be framed by the resolution of the information problems…, and by limits to time and financial resources."* (2004, p. 232)

Information itself has likewise been defined by numerous scholars, but for the purposes of this study, Talja's 1996 definition of information *"… as something that modifies an individual's knowledge structures or knowledge states."* (p. 67- 68) will be used.

Over the last fifty years the discipline of information science has explored aspects of information retrieval, information problem solving, and information behaviour. Many studies (e.g. Kuhlthau 1993; Wilson 1997) have adopted a basic interpretation of information seeking and searching behaviour in a way that relies upon an interpretive framework based on problem stages, processes, and simple feedback loops.

Over the last decade or so new areas of investigation have identified the true complexity of what we now refer to as Human Information Behaviour, (HIB). Spink (2004) identified features such as successive searching and later with Cole (Spink and Cole 2006) described multitasking information seeking, while Foster (Foster 2004; 2005; 2006) modelled HIB as a continuous, dynamic and evolving nonlinear

process. Other recent studies have developed the study of everyday life information seeking (ELIS) to:

- Emphasise that HIB occurs in both formal and informal contexts (Savolainen 2005)
- Show that information seeking and learning are closely related cognitive functions (Limberg 1998)
- Demonstrate that through the dimension of Information Horizons (Sonnenwald, Wildemuth and Harmon 2001) we may see a full picture of Human Information Behaviour.
- Reiterate that the type of information search strategy used is affected by the purpose of the search at a given moment (Bronstein 2007).

These and other studies have pointed to a move away from interpreting individual information problems, and have begun to explore HIB from an holistic, social, and psychological perspective which interprets information behaviour as a fundamental psycho-social attribute that must be viewed within a network of contexts. This Everyday Life Information Seeking, [ELIS] as it has become known, is the main focus of this review, as there is a huge body of literature on general information seeking behaviour going back to the 1940s, which has been competently and comprehensively reviewed by other learned researchers in the field, including Wilson (2000; 2006), Case (2002) and Meadows (2008).

Human information behaviour (HIB) is a wide area, and the exploration of this topic requires a focus. As a key part of human social life the family and peer group have been surprising omissions from the body of research. Few studies from within Information Science have examined the interactions of individuals as members of family groups - one of the few examples is Davenport, Higgins and Somerville (2000), who studied the negotiation of use of new media within households. This study considered the differences between vendors and consumers of various new types of information and communication technologies and the social dynamics of households. One of their findings was that the younger generation is able to accept and use new technology more easily than their parents. Kraut *et al.* had previously noted this and state that *"Of all the variables, generation – the difference between teens and their parents – was the strongest predictor across all analyses"* (1996, p. 60). It should be

noted that although Kraut *et al.*'s study is from 1996, later research has shown similar results, such as Helsper and Eynon (2010) who state that

> *"... while the proportion of young people who use the Internet and other new technologies is higher than the older population […] there are significant differences in how and why young people use these new technologies and how effectively they use them."* (p. 505)

It should be noted that Helsper and Eynon also suggest that length of exposure to technology has more impact than age on a person's ability to use it. (2010, p.515) Behesti suggests that despite this technical knowledge and ability, there is a worrying tendency for today's teenagers to be lacking in basic information evaluation and retrieval skills. Behesti also states that as teenagers have difficulty judging relevance and are *"for the most part … information illiterate"* (2012, p. 55), intervention may be required to assist them in their information searching. Tsai and Kim (2013) have studied peer group influences on information source choices of college students, but not from a family or household perspective. Tsai and Kim (2013) also found that whilst peers were consulted frequently, the information was often then verified via either a tutor or some other form of information source. Other studies (including Chang *et al.*, 2012; Ellis and Oldman 2005; Savolainen 1995; Tsai and Kim 2013; Markwei and Rasmussen 2015,) also found that when consulting people as information sources colleagues, friends or family members are often the first choice of individuals, followed by various information professionals including librarians.

2.3 Everyday Life Information Seeking Behaviour

Burnett (2000) summarises some of the main ELIS literature by stating that Savolainen draws on the work of Pierre Bourdieu to study non-work based ELIS, using Bourdieu's concept of habitus, which Burnett suggests is *"… an internalized, [sic] socially conditioned disposition toward living and information use."* (para. 6, no page number available) Burnett goes on to say that Savolainen describes two main areas of ELIS.

> "The first dimension - practical information seeking - is aimed at finding specific answers to discrete information needs, often operationalized [*sic*] as specific questions. The second dimension, however, is a more general activity that allows people, as part of their everyday activities, to monitor the world - or "information neighborhood" [*sic*] - in which they live for any information that may be related to their on-going interests and concerns." (para. 7, no page number available)

Burnett (2000) goes on to describe information encountering, whereby people may place themselves in an environment where they feel they are likely to stumble across information of interest or use to them. Burnett continues by saying that "*Bates (1989) refers to such serendipitous information acquisition as "berry-picking." Further, Chang and Rice (1993) suggest, in an extensive study of browsing, that information gathering is often an informal, non-goal-directed activity that allows users to orient themselves within an information environment*," (para. 9, no page number available)

Burnett (2000) also discusses that people are widely used as information sources, stating that as

> "Williamson (1998) and Haythornthwaite and Wellman (1998) suggest, one's "information neighborhood" [*sic*] is not only made up of media sources, but also - and perhaps more importantly - by people, including family, friends, neighbors, [*sic*] co-workers, and a shifting network of acquaintances. Indeed, as Haythornthwaite and Wellman (1998) point out, the exchange of information is, in any human situation, fundamentally a social interaction rather than a mere instance of goal-oriented information retrieval or interaction with an information system." (para. 9, no page number available)

Whilst Burnett does not refer to Roman Jakobson's 1960 communication model, which discusses the relationship between the *"… constitutive factors of verbal communication"* and the *"… corresponding functions of language."* (p. 355), it should be noted that both authors discuss the human element within communication. Tsai (2010) also notes the importance of interpersonal human interactions in information seeking.

Berger and Luckmann state that

> "Everyday life presents itself as a reality interpreted by men and subjectively meaningful to them as a coherent world. … The world of everyday life is not only taken for granted as reality by the ordinary members of society in the subjectively meaningful conduct of their lives. It is a world that originates in their thoughts and actions, and is maintained as real by these." (1967, p. 33)

Searle, 1995, adds to this school of thought with his work The Social Construction of Reality, in which he describes what he calls "Background" as the personal context which an individual uses to attribute meaning to a sentence, or piece of factual information. He defines his concept of the "Background" as *"… the set of nonintentional or preintentional capacities that enable intentional states of function."* (p. 128) Searle goes on to define the capacities of the "Background" stating that it:

- Enables linguistic interpretation to take place;
- Enables perceptual interpretation to take place;
- Structures consciousness;

- Facilitates certain kinds of readiness;
- Disposes [a person] to a certain sorts of behavior [*sic*].

(1995, pp. 132 – 136)

Searle also says of the "Background" that *"…temporarily extended sequences of experiences come to us with a narrative or dramatic shape"* and that *"… each of us has a set of motivational dispositions, and these will condition the structure of our experiences."* (1995, pp. 134 – 135)

Searle refers both to *"Wittgenstein's later work"* and *"Bourdieu's important work"* on habitus as being essentially about "Background", citing Hume as having recognised *"… the centrality of the background in explaining human cognition"*, with Nietzsche noting that background is changeable. (1995, p. 132) Ahearne (1995) discusses de Certeau's view of habitus as *"… a theoretical or heuristic artefact which tends to conceal its status as such and to congeal into the fundamental or 'mystical' reality of practices."* (p. 153)

ELIS is therefore the day to day mundane information seeking which is often overlooked by research. Previous studies (Agosto and Hughes-Hassell 2005; Cooper 2004; Kuhlthau 1993; Savolainen, 2005; Spink, 2004; Spink and Cole, 2006) have focused on how information seeking behaviour changes according to the type of task or for particular purposes, but little research has concentrated specifically on generational differences in information seeking behaviour.

As stated above, one of the problems under investigation is how individuals are influenced by their peers, family/household and any other personal (internal or external) factors. Internal or external factors can range from individual learning style, current mood, to time constraints.

Diamond *et al*. 2014, state in their study on how students choose colleges that

> "… information behaviour (that is, activity relating to the acquisition and use of information) is influenced by a range of factors including personal and psychological traits, as well as social and environmental conditions. Each of these aspects not only influences information-seeking behaviour, but also decision-making behaviour. For example, personal characteristics (such as psychological or behavioural traits) can inhibit thorough searches, social pressure (e.g. from peers) may reduce opportunities, and environmental factors (such as proximity to home) also have a bearing on choices and decisions." (2014, p. 4)

Diamond *et al.* go on to say that *"A person's socio-economic background, the influence of key people in their lives, and the institutions they engage with (such as their school) are highlighted as particularly important in forming information-seeking behaviour and decision-making."* (2014, p. 5) adding that

> "Information seeking is dynamic, and the nature and requirement of people's searching is rarely simple. Accessing and using different sources of information does not always result in either a decision being made or a reduction of uncertainty. In this context it is also possible for people to be overloaded with information, making further progress toward a goal either cognitively or emotionally problematic." (2014, pp. 5 - 6)

Other factors that influence a person's information seeking may include a need to find information for a particular reason or task, such as intrinsic or extrinsic motivation. (Heinström 2000; Foster 2004; 2005; 2006; Julien and Michels 2004.) These factors have been identified in the studies and are considered later in this research.

Bronstein suggests that *"…the purpose of the search … at a particular moment affects the nature of the information strategy used."* (2007, para. 28, no page number available) This may explain why people will often try to obtain certain types of information from people they know and trust – especially if they perceive the information to be of a type they will not need to know often. Ellis and Oldman found in their study on English literature researchers that people use informal sources for some things, formal for others, noting that *"… researchers use electronic media for a quick exchange of ideas or exchange of bibliographic details and for informal contacts with their colleagues rather than publishing their work."* (2005, p. 31) Participants from Savolainen's 1995 study *"… preferred informal sources, primarily personal communication, whereas the utilization of formal channels remained surprisingly low."* (Savolainen, 1995, p.282)

Savolainen's concept of ELIS complements naturalistic inquiry in that it considers the holistic environment of the information seeking context. His 2005 work discusses the tendency for values and way of life to pre-dispose a person towards certain information sources, while providing *"… only general criteria for preferring and using various sources and channels."* (p. 146), having referred back to his own 1995 paper in which he *"… defined the concept of way of life as "order of things" which is based on the choices that individuals make, ultimately oriented by the factors constituting habitus."* (2005, pp. 143 - 4) In the same paper, Savolainen describes *"Mastery of life"* as *"… a general preparedness to approach everyday problems in certain ways according to one's values."* (2005, p. 144) There is a link here to the structure versus agency debate, in that, as noted by Sin (2011) socio-structural factors are related to the *"… basic, recurring pattern of the society in which an individual lives,"* and that these are often *"…beyond the individual's immediate control."* (p. 182) Sin also

states that *"*Social structure *is the most basic, enduring and orderly pattern in social life. Individual agency refers to the capabilities of an individual to act independently of the constraints exerted by the social structure."* (2011, p. 182) [Emphasis in original] Savolainen goes on to say that *"Information seeking is an integral component of mastery of life."* (2005, p. 144) However, he also posits that information seeking to solve practical problems has less of a link to way of life, suggesting this is partly *"… because this type of ELIS is contextualized in specific problem-solving situations."* (2005, p. 147) This also has a relationship to Bourdieu's "habitus" and Searle's "Background", in that the pre-disposition of a person's choices of how, when and where they choose to undertake information seeking is connected to that persons pre-conceived, non-intentional ideas of what information they should seek. The existing information and information sources available to a person will also have an impact on these decisions, and thus the information strategy chosen may therefore depend more on the situation of the problem to be solved, including factors such as how immediately the information is required and what additional resources are available to the seeker.

2.3.1 Information Sources

There are many sources of information used by people when seeking information. A study by Lathey and Hodge found that *"The respondents most frequently looked to peers and colleagues in their agency, personal files and books, and professional organizations as important sources of information."* (2001, p. 87) This particular study investigated the information seeking behaviour of a group of nurses and the authors found that *"… nurses prefer human, face to face contact"* when seeking information. (2001, p. 87) They go on to say that sources of information which are convenient, understandable and available in a timely manner are also those most typically relied upon, and that their findings are in line with those of other studies, including that of Strasser (1978), which considered the information seeking habits of physicians.

Chang *et al.*'s 2012 study about Information Literacy, which states that

> "Earlier studies on information behaviour suggested that human information sources, rather than physical information sources, such as print materials found in libraries, often are the ones that are the most heavily used, even by professionals, such as lawyers and engineers (Leckie *et al.* 1996; Wilkinson 2001; Fidel and Green 2004)." (p. 30)

Chang *et al.* also say that when *''... asked about the people consulted across the different stages of the information process, most students reported that friends,*

peers/classmates, teachers, and family are the frequently consulted human sources." (2012, p. 26)

Nelson, Osaze and Uche (2016) mention in a report of their study on the information seeking behaviour of seniors that Wick (2004) carried out a literature review of research in this area. Wick suggests that seniors rely on interpersonal sources as well as on print materials produced within organisations of which they are members. Nelson, Osaze and Uche go on to state that their results showed that *"The most preferred source of information […] is the use of family members (98%)."* (2016, p.1)

Burnett states that *"…the Internet has become the information resource of choice for significant numbers of people."* (2000, para. 1, no page number available) This has been borne out in this study, as the majority of the participants interviewed state they use the internet, specifically particular search engines, as their first non-human port of call for information. Lopatovska, Fenton and Campot (2012) also confirm that email, search engines and social media sites were the most commonly used information sources after personal contacts.

Haralambos and Holborn mention an omnibus study carried out on behalf of the British government and published by the Office for National Statistics in 2003, which looked at social family contacts: "… *Grandparents also made use of technology to contact their grandchildren: 60% used letter, telephone, fax or email to keep in touch at least once a week."* (2004, p. 492) Haralambos and Holborn further state that *"This research shows that both face-to-face and other contacts between family members remain quite frequent."* (2004, p. 492)

2.3.2 Discussion of information behaviour

Lopatovska, Fenton and Campot summarise Johnson's (2003; 2006) information field and pathway framework: "*Information field is a concept that represents the typical arrangement of information stimuli available to individual [sic] on a regular bases [sic]; information pathway refers to a specific sequence of individual actions involved in information source selection."* (2012, p. 6)

Information pathways are represented in many of the current information seeking models, in several different ways. Kuhlthau (1993) suggests a continuous path via a series of steps, as does Ellis (1989) (although p. 243 of this article suggests that the study participants employ reason and logic to use certain steps together) while

Foster's 2004 nonlinear model of information seeking suggests steps are used but not necessarily in a particular order.

In today's increasingly networked, online world, many people use tools such as Google to locate rather than remember information. This is confirmed by Lopatovska, Fenton and Campot's 2012 and Sparrow, Liu and Wegner's, 2011 studies. Hillis, Petit and Jarrett (2013) open by posing the question "What did you do before Google?" They then discuss the fact that Google is now considered an *"essential tool"* by many people when conducting any kind of online search. They go on to say that *"Many younger people have no experience of the web before Google, which they first encountered as their browser's default search engine."* (p. 3)

If the information is perceived to be important enough to likely be needed again, it is often printed off and placed where it can be accessed with minimum future effort. Participants in this study used an offline, printed aide memoire when trying to identify if a particular item was able to be recycled or not. This is referred to as the "recycling wheel" and this behaviour is discussed later in this study.

Lopatovska, Fenton and Campot (2012) used Johnson's (2003; 2006,) information field and pathway framework, to establish that there are two different information fields available – digital (including internet sources and email), and analogue (comprising print sources and other people). They found that when respondents in their study were asked to abstain from search engine use for a four day period, the respondent's use of other digital information sources was reduced.

2.3.3 Information Seeking through Browsing

Foster and Ford (2003) quote Bawden's 1986 paper, which proposes that

> "At least three kinds of browsing have been recognized [*sic*]: "purposive" browsing, the deliberate seeking for new information in a defined (albeit broad) subject area; "capricious" browsing, random examination of material without a definite goal; and "exploratory" or "semi-purposive" browsing, in search, quite literally of inspiration." (p. 211)

Chang (2005) states that *"Browsing is a commonly observed form of human behavior."* [*sic*] (p. 69) Chang goes on to discuss that browsing as a concept is difficult to define as *"… its nature is not well understood."* (2005, p.69) Therefore Chang describes how he previously developed a browsing model, which incorporates the motivations, patterns and behaviours of browsing. Chang identifies *"… five contexts that motivate people to browse"* (2005, p.69) which result in *"… nine specific patterns of browsing."* (2005, p.69) Chang considers these contexts within

the dimensions of behaviour, motivation, cognition and resources available. Chang therefore suggests that browsing behaviour will depend upon the context of the information sought, *"… a given browsing activity can be described according to the level of scanning, the kind of resource scanned, and the type of goal and object"* (2005, p.71) Chang's contexts and behaviours for browsing are as follows:

1. Looking for a specific item - situational and opportunistic browsing
2. Looking for items with common characteristics – systematic, evaluative and focussed browsing
3. Keeping up to date – monitoring browsing
4. Learning or finding out – indicative and preparatory browsing
5. Goal free – invitational browsing.

(Chang, 2005, pp. 71-72)

Chang then describes these browsing behaviours using examples. He concludes that browsing is something people also engage in for recreational purposes, *"… to satisfy an intrinsic need for enjoyment or diversion."* (2005, p.73) and that another reason people browse is due to being frequently surrounded by information sources.

2.4 Serendipitous Information Seeking

The *Oxford English Dictionary* definition of "Serendipity" is *"The faculty of making happy and unexpected discoveries by accident."* This is a useful starting point when considering serendipitous information seeking. From this perspective, serendipity can be defined as chancing upon information about one topic whilst searching for information about another, often unrelated matter. There are several areas of research into serendipitous information encounters, the most relevant to this study include Williamson's Ecological Theory of Human Information Behaviour, Erdelez's (1997, 200, 2005) Information Encountering and Foster and Ford's (2003) Serendipity. These areas are considered below.

2.4.1 Ecological Theory of Human Information Behaviour

Williamson's ecological theory for the study of human information behaviour *"… emphasizes that, at least in the field of everyday life information, information is often incidentally acquired rather than purposefully sought."* (2005, p. 128) Wilson suggests that information seeking is *"purposive and adaptive"* (1977, p. 36) however, he also states that people come across information unexpectedly as they pursue other activities, (1977, p. 36) influencing Williamson's choice of *"incidental information acquisition"* as a term for this type of serendipitous information encounter. Bates' (2002) paper also influenced Williamson and gives equal

relevance to active and passive information seeking and suggests that *"… it is not unreasonable to guess that we absorb perhaps 80 percent of all our knowledge through simply being aware, being conscious and sentient in our social context and physical environment."* (p. 4)

Both Erdelez and Savolainen's work has also considered this phenomena. Tuominen and Savolainen (1996) refer to Berger and Luckmann's 1967 work which discusses layers of consciousness and how even though these layers differ they are all are actively conscious. Berger and Luckmann suggest this depends on *"layers of experience, and the different structures of meaning involved in, say, being bitten by a dog, remembering having been bitten by a dog, having a phobia about all dogs, and so forth."* (1967, pp. 34-35)

Williamson also suggests that some information needs remain unrecognised until the discovery of relevant information that triggers the realisation of the information need. (2005, p. 129) Williamson recognises that this area requires additional research and suggests it is relevant to *"… the study of the use of sources of information and information systems."* (2005, p. 130) Williamson goes on to discuss the significant role that family, friends, and colleagues play in the acquisition of incidental information.

2.4.2 Information Encountering

Erdelez used the term information encountering in 1997, based on a study into accidental information acquisition using online sources in an academic environment. Erdelez (2005) notes that Williamson (1998) and Toms (2000) also considered this phenomenon and raised the issues of *"… opportunistic acquisition of information (OAI), [which] is a common behaviour in a modern environment saturated with information and pervasive technologies for its processing and accessing."* (p. 179) as discussed above. Erdelez (1997) suggested four categories of information user, super-encounterers, encounterers, occasional encounterers and non-encounterers, based upon their own view of how much information they encountered incidentally and on their personal characteristics. In subsequent research, Erdelez (2000) reports that there is a certain level of apprehension among the super-encounterers, possibly due to the information overload to which they are potentially exposed. Erdelez (2005) goes on to identify Information Encountering as a specific type of "…*opportunistic acquisition of information and defined it as an instance of accidental discovery of*

information during the search for some other information." (p. 180) Erdelez (2005) also suggests that this narrow definition allows for other, as yet unidentified types of information encounter to be categorised in the future. (p. 180)

Erdelez describes how an information seeker's attention shifts from the original primary task to something else based on background interest, task or problem when relevant information is encountered. Therefore the seeker moves through several stages, including noticing the new information, stopping the original search by actively pursuing the encountered information rather than staying with the original search, examining the new information, recording or capturing this new information, and potentially returning to the original information seeking task after examining the incidental information. (2005, p.181)

Erdelez (2005, p. 182) discusses how in depth interviewing enables the capture of rich descriptive data of users' experiences of information encountering and opportunistic acquisition of information.

2.4.3 Serendipity

Foster and Ford (2003) state that serendipity is *"a paradoxical concept"*, being perceived both as valuable and *"… elusive, unpredictable and […] not subject to either the understanding or the resultant control that would enable it to be "used" as a conscious information-seeking strategy."* (p. 321) Similar articles and materials are often placed together in storage facilities, be these library or digital collections. This may enable serendipitous discoveries of unsought information, or may be used in a deliberate way, for example by scanning the contents of a journal issue which contains a known article of interest to discover additional relevant material. Foster and Ford (2003) add that *"In science, serendipity has been thought of as the product of mental preparation, an open and questioning mind."* (p. 322) this is also the case, they suggest, in other types of research

> "Serendipity would seem to be important across disciplinary areas for its role in connection building, discovery and creativity. The literature presents serendipity as being in some way both passive and yet capable of "efficiency", or techniques by which hidden knowledge may be retrieved." (Foster and Ford, 2003, p. 323)

Serendipity within digital collections may be threatened by filters and thus a reduced number of serendipitous results may be retrieved by a specific or very refined search query. Cooper and Prager (2000) discuss how serendipitous findings can result in the location and retrieval of *"useless documents and similar documents."* (p. 1) They assert that this can lead to problems with information

overload and is an increasing issue as documents proliferate, as *"… even after a query has been refined, the problem of having to read too many documents still remains."* (p. 1) Cooper and Prager (2000) describe a set of algorithms they have devised for refining searches to enable only the most appropriate documents to be retrieved, using five predictors of document usefulness. They identified two of these filters as being the strongest predictors of usefulness and summarise by suggesting that their algorithm's parameters could easily be adapted to any finite collection of documents, thus reducing the volume of irrelevant documents requiring assessment.

However, Foster and Ford (2003) posit that there is a view of serendipity as *"… a purposive or active phenomenon."* (p. 323) Their view suggests that serendipity is an important and positive *"by-product of browsing."* (p. 323) Rice, McCreadie and Chang, (2001) state that *"One of the consequences of browsing in the library and through journals is finding something of interest or some things that are not originally sought."* (p.182) Foster and Ford (2003) suggest that other researchers (Toms, 1998; Roberts, 1989; Hill *et al.*, 1997; and Batley, 1988) have also offered opinions allied to serendipity being a form of action while searching, even if unconsciously.

Access to information sources also has an impact on how serendipitous a search may be, as will the level of knowledge of the information seeker and their ability to both search and recognise the unsought but relevant information when it occurs. Rice, McCreadie and Chang, (2001) state that *"One's experience, potentially accessible contacts and communication channels, and pre-existing cognitive and emotional associations make one pre-disposed to finding useful information even when there is no intended information seeking going on."* (p. 182)

Foster and Ford (2003) go on to posit that serendipity can lead to either a reinforcing of the original problem or solution or to a totally new area of problem resolution. They suggest that *"Certain attitudes and strategic decisions were perceived to be effective in exploiting serendipity when it occurred."* (p. 337)

2.5 Information Grounds

Fisher (2005) states that *"… information grounds are temporal: They can occur anywhere at any time in varied and often unexpected places."* (p. 185) She goes on to quote Pettigrew's definition of information grounds as *"… synergistic environment[s] temporarily created when people come together for a singular*

purpose but from whose behaviour emerges a social atmosphere that fosters the spontaneous and serendipitous sharing of information." (1999, p. 811)

Information exchange at an information ground is often a by-product of social interaction, rather than purposive information seeking, although the general conversation may be led in a purposive direction if one person is seeking particular information. This type of information encountering is due less to serendipity than to the fact that the location and time are an information ground.

Fisher (2005) goes on to discuss the fact that information grounds are not a new phenomenon just that the idea of them is new. They occur anywhere where people come together for any purpose, as information is almost always exchanged in some way.

2.6 Information horizons

Sonnenwald discusses the fact that human information-seeking behaviour is determined by situation.

> "An individual, within a particular situation and context, may encounter an information need; the situation and context help determine the information need. Social networks also provide a lens that facilitates the identification and exploration of information needs. Furthermore, the individual, social network, situation and context may help determine the information resources available to satisfy the need." (2005, p. 192)

Sonnenwald goes on to state that *"… within a context and situation is an "information horizon" in which we can act. When an individual decides to seek information, there is an information horizon in which they may seek information."* (2005, p. 192) This may be made up of different resources and relationships among these resources. These can be *"… different for different contexts, even for the same individual."* (2005, p. 192-3)

Personal knowledge can shape an individual's information horizon, as a person will know of resources and their own preferences will also be a factor in limiting their information seeking behaviour. Sonnenwald further elucidates that *"Human information-seeking behaviour may, ideally, be viewed as collaboration among an individual and information resources."* (2005, p. 194) An information horizon is thus subjective, and contextualised by the perceptions of the individual concerned, in a similar way to Jauss' notion of a horizon of expectations, which defines a person's view of a specific information resource based on *"… his social and cultural experiences."* (Griswold, 1987, p. 10)

Tsai and Kim defined an information horizon as *"… a mental map where individuals position various sources according to their preferences in specific contexts."* (2014, p. 1) They further state that the framework of Sonnenwald's information horizons *"… focuses on individuals' source use preferences and emphasizes the importance of investigating how contexts, situations, and social networks shape individuals' information behaviour, as well as the relationships among sources used by individuals."* (2014, p. 1) Their paper uses concentric circle diagrams to show source use preference in three different situations. The centre circle shows the most preferred sources, with the outer circle showing those less preferred. Tsai and Kim note that "*Peers were consistently placed in the most preferred zone across all situations."* (2014, p. 2) While stating that *"The concept of situations is one of the important elements in IH"* (2014, p. 3) they conclude that *"… peers were the most preferred [information] source across all situations…"* (2014, p. 3), and that peer influence is a major factor in information seeking. In an earlier paper, Tsai posits the theory that stronger social ties will engender more information requests of a person but *"The context of the interpersonal connection may also play an important role."* (2010, p. 2) This implies that the relationship of a person who is a potential information source to the information seeker will have an impact on the types of information request they are comfortable to bring to a person. Tsai (2010, p. 2) also notes that while students from the study were likely to ask their peers for information, they also corroborated that information by checking other sources.

Sin (2011) draws these ideas together, noting that *"… concepts such as information horizon […] information field […] and information pathway […] have been applied to study what sources are considered, preferred or used for a particular task, or to identify the sequence of source selection by individuals."* (p. 186) This research also seeks to build upon these concepts.

2.7 Chatman's Information Seeking Behaviour Theories

Chatman described her work as being influenced by several scholars within the field of sociology of knowledge, including Merton's 1972 treatise on insiders and outsiders as well as Berger and Luckmann and Goffman's body of work. Chatman (2000) discussed her information seeking behaviour research in terms of being three separate theories: information poverty, life in the round and normative behaviour. Although Chatman considered these as separate theories, they are all based around

similar concepts and have definite links to one another. These theories are considered below.

2.7.1 Information Poverty

Chatman discusses the theory that people view their information sources in a very localised way. Chatman (2000) says that *"Ordinary people experience information in response to everyday needs and concerns. Ways in which this type of information is viewed depend upon the context in which it is found."* (p. 3) Chatman describes her view of Wilson's (1983) concept of the small world, *"… in which everyday happenings occur with some degree of predictability."* (p. 3) Chatman goes on to say that this view of the small world allows for what she calls *"legitimized others."* (p. 3) These legitimized others are people who *"… shape, change, or modify the information that enters a small world in the light of a world-view. In this instance a world view is that collective sense that one has a reasonable hold on everyday reality."* (2000, p. 3) In an earlier paper, Chatman's definition of a small world is of *"… a community of like-minded individuals who share co-ownership of social reality."* (1999, p. 213)

Information poverty is set within the framework of there being information insiders and outsiders within the social context. Chatman (1996) draws upon Merton's 1972 work to further discuss that in this context, *"insiders"* are the *"people like themselves"* (p. 205) while outsiders are simply all those who are not included in this social or work group. Chatman posits that *"… only insiders can truly understand the social and information worlds of other insiders."* (1996, p. 195) The theory is more complex, however, due to Chatman's discovery that often, rather than a "them and us" situation, individuals felt they were in a single minority, with everyone else being "them." (1996, p. 205) This theory is influenced by the sociology of knowledge, defined by Berger and Luckmann as being concerned with *"… the analysis of the social construction of reality."* (1967, p. 14)

Chatman (1996, pp. 194 – 197) describes the theory further within the framework of the "sociology of knowledge", which incorporates four key concepts. These are secrecy, deception, risk-taking and situational relevance. At the time Chatman was writing, she states that there was no literature available on the area of situational relevance, however, she suggests that *"… the relevance of information to a group might be suspect if it originates from outside the group."* (p. 195) Hersberger (2001)

discussing how homeless parents would not always seek information if the information seeking was perceived by others as linked to an information need, suggests that "*Internal versus externally motivated information needs would then be perhaps included under situational relevance."* (p. 133)

Chatman (1996) suggests that *"The purpose of secrecy appears to be to protect ourselves from intrusion from* whatever *source."* (p. 195) [Emphasis in original] She goes on to use several other scholars' definitions of secrecy, ending with her own statement that *" … concealed information is intended as a separation mechanism in which a person or select group of persons view themselves as ultimate insiders."* (p. 195) In Chatman's studies, secrecy was found to be a self-preservation measure, protecting a person from the disclosure of a true set of affairs. The use of secrecy within situations also has an implication of power, if, for example, information that could be harmful to a person is known by another. Chatman found that a person was likely to refuse to receive information or advice, even when this would have benefitted their information need or bettered their situation, linking to the concept of deception.

Chatman (1996) suggests that *"… deception is a deliberate attempt to play-act, that is to engage in activities in which our personal reality is consciously being distorted. It is a process meant to hide our true condition by giving false and misleading information."* (p. 196) She went on to say *"… the fundamental result of deception leads to a remarkably precarious position in which information sought is irrelevant."* (1996, p. 196) Chatman then discusses that the concept of deception is also considered within the sociology of knowledge framework.

Risk-taking is perceived to be part and parcel of the everyday decision making process, in the consideration of how much information to divulge in order to access the sought knowledge.

All four of these behaviour concepts are discussed as having been used for self-protection within the information seeking context. Chatman goes on to state that *"… what this means in the light of information acquisition and use is that insiders shield themselves from needed resources."* (1996, p. 194) This is in part, Chatman suggests, due to insiders believing that the required information *"…. resources are held by outsiders."* (1996, p. 194) Chatman (2000) discusses the importance of trust in information seeking – and that lack of trust impedes information sharing, which in turn can lead to an information seeker feeling alienated. These barriers to

information can also influence information seeking behaviour. Chatman (2000) says that *"A theory of information poverty explains ways in which people define their life experiences in order to survive in a world of extreme distrust."* (p. 7) The concepts mentioned above - secrecy, deception, risk-taking and situational relevance – were explored in Chatman's aging population study, whereby the women often avoided seeking relevant information as they apparently did not want either their family, neighbours or staff at the institution to be aware of their health needs – due either to fears of compulsory rehousing in a nursing home or fear of alienating family or neighbours. Within Chatman's janitorial study, she found that workers often did not pursue or share information about job prospects either due to competitiveness or a feeling that what will be will be, so the expenditure of effort to find information was just not viable. Chatman's information poverty theory is based upon a set of six propositions, the first of which is that *"People who are defined as information poor perceive themselves to be devoid of any sources that might help them."* (1996, p. 197) It should also be noted that when discussing her prisoner study, Chatman (1999) states that *"People will not search for information if there is no need to do so. If members of a social world choose to ignore information, it is because their world is working without it."* (p. 214)

Other scholars including Hersberger and Pettigrew have gone on to test these propositions further within their research involving homeless people's information seeking and according to Hersberger (2005) some of the six propositions were supported while others were not, which confirms the contextual nature of the theory.

Scott (2012) discusses information poverty from the perspective of social network analysis and suggests that *"The total social field, therefore is a field of forces acting on group members and shaping their actions and experiences."* (pp. 14 – 15) This is based on the social field comprising paths connecting points, which in turn, represent people or their goals or actions. Paths represent the interactional or casual sequences that connect the points.

2.7.2 Life in the Round

Chatman's prisoner study explored the theory of Life in the Round, wherein Chatman discovered that social norms and self-protective behaviours drive a person's public behaviour. Four concepts again provide the basis of propositions of

the theory – small world, social norms, worldview and social types. Chatman (1999) describes a small world in this context as

> "A society in which mutual opinions and concerns are reflected by its members, a world in which language and customs bind its participants to a worldview. Resources (both intellectual and material) are known and easily accessible. It is a world in which there is a collective awareness about who is important and who is not; which ideas are relevant and which are trivial; whom to trust and whom to avoid. In its truest form, a small world is a community of like-minded individuals who share co-ownership of social reality." (p. 213)

Within the prison study, Chatman (2000) found that the *"[social] norms set initial (and in some cases, lasting) boundaries in which to play out one's life-world."* (p. 8) Chatman drew upon Berger's 1963 work in which it's noted that *"a primary function of social norms is to tell 'an individual just what he/she may do and what he/she can expect of life.'"* (2000, p. 8) Berger and Luckmann (1967) also have an information dissemination safety policy, stating that *"In everyday life I know, at least roughly, what I can hide from whom, whom I can turn to for information on what I do not know, and generally which types of individuals may be expected to have which types of knowledge."* (1967, p. 61) Fulton (2005) defines social norms as *"... standards of acceptable behaviour in a given context."* (p.80) Chatman (1999) defines social norms within this context as

> "…the customary patterns that take place within a small world. Their purpose is to give this world a sense of balance. They are codes of behavior that include ways to gauge normalcy. Social norms provide a collective sense of direction and order." (p. 213)

Fulton (2005) posits that *"Of utmost importance to Chatman was exploring how ordinary people experience information in connection with everyday needs. She found that one's context was the determining factor of one's perspective on information, and therefore, shaped an individual's use or non-use of information."* (p.79) Fulton adds that *"… information behaviour is about constructing meaning. Critically, location or context facilitates this construction of meaning, since members assess the importance or relevance of things in their every-day lives."* (p. 81) Douglas (1970) confirms this precept when he discusses the fact that sociology *"… necessarily begins and ends with the understanding of everyday life.*" (p. 3) Even if sociologists claim not to be applying everyday common sense, he says

> "… they have covertly used common-sense understandings of everyday life to provide the fundamental data – the social meanings – of their research and theory, for the simple reason that there is no other way to "get at" the social meanings involved in social actions." (p.3)

Douglas goes on to say that "*There are few social scientists, […] who would try to describe or explain human actions without making some reference to what Collingwood called the inside, or the internal state, of the actor."* (1970, p. 4) Collingwood, who was an historian and philosopher writing during the early to mid-twentieth century, suggested that in order to understand an historical event, the historian should attempt to re-enact the thoughts of the figures involved in the historical event, emphasising that one should study the reasons and motives behind those events, rather than merely looking for external causes for them. Dray's 1980 article discusses this concept as "Collingwood's Historical Individualism." Douglas goes on to say, however, that most sociologists *"… agree that social actions are* meaningful *actions, that is, that they must be studied and explained in terms of their situations and their meanings to the actor themselves."* (1970, p. 4) [Douglas's emphasis.]

Chatman (1999) states that

> "A life in the round requires a public form of life in which general knowledge aids in small learning. It is a life in which certain things are implicitly understood. Played out in a small world, it is composed of *normal language, worldview,* and *codes.* Life lived in the round is the *process* that permits social meaning to happen. It is the integration of a world in which most things are easy to understand, and in which news comes to a small stage." (p. 212) [Chatman's emphasis.]

Pettigrew, Fidel and Bruce (2001) suggest that *"In essence, life in the round adversely affects information seeking for day-to-day situations because people will not search for information if there is no need to do so."* (p. 55) This echoes Chatman's own views of how limiting one's exposure to information causes a lack of knowledge to be perpetuated, especially within small worlds. This research will consider if any of these information limiting behaviours are evident within the influence of the participants' social groups.

2.7.3 Normative Behaviour

Chatman's theory of normative behaviour encompasses four concepts, social norms; worldview; social types; and information behaviour. Pettigrew, Fidel and Bruce (2001) suggest that this theory is *"… focused on how the everyday reality of people sharing a similar cultural space is characterized by common routine events."* (p. 55) Lincoln and Guba (1985) define social norms as *"… a system of mutual constraints and influence."* (p. 52) Whyte (1981, p. 256) discusses the fact that group behaviour follows established patterns. Burnett, Besant and Chatman, (2001)

suggest that social norms allow for *"… standards of "rightness" and "wrongness" in social appearances."* (p.537), adding *"The boundaries of a world are set by social norms, and most members feel disinclined to cross them."* (p.537) Douglas (1970) also notes that social norms are the *"… stuff of everyday life."* (p. 3) Pettigrew, Fidel and Bruce (2001) add that *"Through social norms, normative behavior [sic] dictates a predictable, routine, and manageable approach to everyday reality. In this sense, it contains the lessons that one must learn to cope successfully in a particular social world."* (p. 56)

Burnett, Besant and Chatman, (2001) posit that *"Worldview is a collective perception held in common by members of a social world regarding those things that are deemed important or trivial."* (p.537) Fulton (2005) suggests that *"Worldview is the collective of common beliefs, customs and language of small world members, by which they evaluate behavior [sic] and interpret the world."* (p. 80)

Fulton (2005, p. 80) describes social types as being a facet of social norms, being allocated among the members of a small world according to accepted behaviour patterns or expectations in the case of new members of the small world as in Chatman's prison study, where new inmates were termed "brides."

Information behaviour is considered within normative behaviour and the world view concept as a way of assigning value to the available information, with not all information items being of equal value. Burnett, Besant and Chatman, (2001) suggest that

> "A worldview provides a collective approach to the overall importance of things, and ensures that details do not all have the same value as they enter an individual's awareness. Rather, through the collective worldview, the learning of perception in concert with others alerts members of a small world to become conscious of those things that they *ought* to know." (p. 537) [Emphasis in original]

Within the concepts of social types and social norms, Pettigrew, Fidel and Bruce (2001) note that a person's efforts to create and maintain a particular social type will affect their information seeking behaviour.

> "If a situation requires information behavior [sic] that is inconsistent with the established worldview or contradicts the social type one has established, then the individual is likely either to avoid or to disengage in information seeking or to move to another social world where he or she can engage in the behavior [sic] more freely." (pp. 56 - 7)

This suggests that although social norms and social types are often deeply embedded, people are able and willing to amend both their information seeking

behaviour and their social circumstances if they perceive a significant need to change.

2.8 Practice of Everyday Life

Rothbauer (2005) brings together many of the previously discussed behaviours, linking them with reference to Michel de Certeau's ideas, based on his 1984 book, The Practice of Everyday Life. Rothbauer discusses how two of de Certeau's key ideas are particularly relevant to the study of everyday life information behaviour. Rothbauer discusses how de Certeau asserted that *"… everyday life is constituted of the* tactics *of individuals and groups in response to the* strategies *of dominant social institutions; and an emphasis on the informal, routine, mundane operations and activities of daily life."* (2005, p. 284) [Rothbauer's emphasis]

Rothbauer (2005) goes on to suggest that

> "Four themes from LIS studies are consistent with [de] Certeau's ideas:
> 1) Information behaviour is situated in non-work contexts.
> 2) Information seeking is a process capable of satisfying needs associated with everyday coping.
> 3) Although information seeking is frequently conceived of as purposeful, some researchers focus on non-purposeful, incidental behaviour (see Erdelez 1997; Williamson 1998).
> 4) Methods of inquiry tend to be qualitative with an emphasis on ethnographic approaches (see McKechnie 2000; Pettigrew 1999)."
>
> (pp. 286 – 287)

Rothbauer goes on to state that

> "[de] Certeau's theory of the practice of everyday life invites an analysis of social "places" whose strategies lend stability to a set of recognized procedures, but importantly, it also insists on an investigation of the everyday actions of those who inhabit and travel those spaces." (2005, p. 287)

She suggests that the ideas enable researchers to consider the *"… potentially banal information practices of ordinary people without neglecting the necessary constraints imposed by information systems of all kinds nor by the forms and fashions of informational texts themselves."* (Rothbauer, 2005, p. 287) Whilst this was interesting, the focus of this research was on Foster's nonlinear evolutionary framework, so this aspect was not explored in further detail.

Ahearne, (1995) discusses how de Certeau distances himself from documents and other historical materials or texts. *"[de] Certeau seeks [elsewhere] actively to reduce the relationship between the interpreter and this documentation to a peculiar kind of banality."* (p. 10 – 11). Ahearne's (2010) review of de Certeau's "The Practice of Everyday Life", suggests that de Certeau advises that readers should create their

own reality of texts, based upon amalgamations of both those documents they've encountered and their own experience of the world. (p. 2) Ahearne also states that de Certeau spends lot of time covering the difference between the actor and "the other", where the actor is an interpreter (or oneself) who interprets the actions of the other, but not from, ever, the same viewpoint. (1995, p.11) as well as considering the fact that historical items e.g. in museums, are *"pre-selected and configured according to the structures of perception which govern our present."* (p.11) Ahearne states that de Certeau himself (in Writing Histories) suggests the idea that *"It is as though history began only with the 'noble speech' of interpretation."* (p.13)

2.9 Principle of Least Effort

This phrase, the Principle of Least Effort (PLE), was first coined by George Zipf in his 1949 linguistics book. Zipf defined the principle as follows:

> "In simple terms, the Principle of Least Effort means, for example, that a person in solving his immediate problems will view these against the background of his probable future problems, *as estimated by himself*. Moreover he will strive to solve his problems in such a way as to minimize the *total work* that he must expend in solving *both* his immediate problems *and* his future problems. That in turn means that the person will strive to minimize the *probable average rate of his work-expenditure* (over time). And in so doing he will be minimizing his *effort*, by our definition of effort. Least effort, therefore is a variant of least work." [Zipf's emphasis] (1949, p. 1)

Lopatovska, Fenton and Campot discuss the fact that information source choices are also often based on Zipf's principle of least effort. They define the principle as stipulating *"… that a person will expend the least amount of effort necessary to solve a problem."* (2012, p. 1) They go on to cite one of their study interviewees who commented that using Google requires less key strokes or mouse clicks than other information sources.

Lopatovska, Fenton and Campot (2012) cover the areas of accessibility, convenience, familiarity, ease of use, proximity and which source requires the least amount of effort to actually use. They also discuss the many other factors that affect the selection of information sources, including those relating to information quality, trust and relevance, those relating to the context, type of information need, complexity, priority and stage of task and individual differences. Lopatovska, Fenton and Campot refer to Savolainen's 2008 paper, in which he *"… showed that human and internet sources were preferred channels for addressing problem-based needs."* (2012, p. 2)

Poole (1985, quoted in Case, 2005, p. 289) posits that *"Information channel use is a function of user awareness."* Case further discusses the idea that people are more likely to use a particular information source or channel if they have prior knowledge or have used the channel previously and are thus aware of its potential uses: *"… humans tend to return to the sources that they have used in the past in strong preference to trying out new sources of information."* (2005, p. 289)

Case (2005) continues that *"… the PLE, which is chiefly pragmatic and not at all optimal (at least in the short term), predicts that seekers will minimize the effort required to obtain information, even if it means accepting a lower quality or quantity of information."* (2005, p. 291) This idea is discussed further in Chapter Seven.

Case further elucidates that the PLE is a *"very general theory"* (2005, p. 291) and is not specific enough, by itself to consider the context and individual differences on personal information seeking behaviour.

2.10 Social Capital

Putnam's (2000) book considers the decline of community in America in the 1950's – 1990's, with a related diminishment of social capital, and then from the late 1990's, the reinvention of social capital via virtual groups. He suggests that *"… the core idea of social capital theory is that social networks have value. Just as a screwdriver (physical capital) or a college education (human capital) can increase productivity (both individual and collective), so too social contacts affect the productivity of individuals and groups."* (pp. 18-19)

Putnam notes that the term Social Capital was originally coined by L.J. Hanifan in 1916, but has been *"… independently invented at least six times over the twentieth century, (each time to call attention to the ways in which our lives are made more productive by social ties.)"* (p.19)

Putnam goes on to discuss the types of social capital and that there are different levels and ways in which to benefit from it. He also talks about the obligations attached to both social networks and social connections: both specific and generalised reciprocity – the notion that a person does something for another, in the expectation of either immediate reciprocation, or a later, more general reciprocation.

Putnam was influenced by Whyte's 1981 work on Street Corner Society, in which Whyte opined that *"The general pattern of life is important, but it can be constructed only through observing the individuals whose actions make up that pattern."* (1981,

p. xix) Whyte goes on to discuss social capital in respect of mutual reciprocity and strong group loyalty. Whyte suggests that especially in light of friendship, if a friend relationship breaks down, it can cause resentment if 'favours' are not deemed to be satisfied on both sides. (1981, p. 12)

Scott (2012) concurs with Putnam's 2000 suggestion that social network analysis is linked to social capital. *"According to this point of view, social networks are a particular form of social capital that individuals can employ to enhance their advantages and opportunities. [See Lin 2001; Burt 2005; Lin and Erikson 2008.]"* (p. 8) Scott goes on to say that Facebook / Twitter / MySpace have added to this, with people able to build up networks of contacts and that they can come to regard their "friends" as a source of social capital. (2012, p. 8) Scott goes on to suggest that social networks are sources of social capital, but much more besides *" … the 'social networks' built up through friendship and contact websites are simply one form of the myriad social connections in which individuals are engaged."* (2012, p. 8 – 9)

Scott (2012, p.24) discusses the idea that a person is in one or more "clique" or group in their social networks. Their cliques are second only in importance to family group membership. It should be noted that a person can be (and usually is) a member of more than one clique and that in this way, social interrelations are possible and often spread to cover whole communities. This has proved to be the case in this study, as during the course of interviews, Participant 75 (P75) mentioned P84 by name, not realising that P84 had already been interviewed, having been referred by a previous interviewee (P74), who was not socially connected to P75. In this example, P84 is in a social network with both P75 and P74 (who provided the original secondary referral of P84). These and other relationships between interviewees are discussed in Chapter Seven.

Hersberger (2003) draws upon Haythornthwaite's social network analysis of information exchange and Lin's social capital concepts to consider the concept of information as social capital and states that *"Information exists as an embedded resource in social support networks"* (p. 100), going on to reference her earlier studies with Pettigrew and James on homeless populations. Hersberger (2003) discusses how she and Pettigrew examined how the homeless people in their study *"… conceptualize [sic], accrue and use this information capital."* (p. 100) Hersberger (2003) suggests that social capital is directly related to the information received and available from social support workers and that *"… social capital and informational*

support are accessed according to the physical proximity of network contacts." (p. 102)

2.11 Foster's Nonlinear Framework

Foster's nonlinear framework of information seeking is a model of HIB that posits the notion of information seeking as a holistic activity. (Foster 2004; 2005; 2006) Foster (2005a) states that *"The nonlinear model proposes a theoretical framework within which information behavior [sic] may be understood and explored."* (p. 254) Foster describes information seeking as "…*nonlinear, dynamic, holistic, and flowing."* (2004, p. 235), going on to suggest that it is led by the information seeking itself – when the information seeking problem is resolved, the information seeking usually ceases. The original research subjects of Foster's work were inter-disciplinary faculty members in Sheffield University, so in many cases, even when a specific information seeking need had been met, monitoring of the information sources would be continued.

Foster's model comprises a set of actions within the information seeking process, which are conducted interchangeably, as opposed to being performed in a set order as discussed in other models, (e.g. Kuhlthau 1993; Wilson 1997). Foster's model includes several phases of information seeking: the core processes of Opening, Orientation and Consolidation, but these are not considered to be a series of actions, rather they are types of actions which may be re-visited at any stage within the information seeking process. These core processes are considered within the overarching approaches of cognitive approach, and both internal and external context. Foster's model is reproduced below for clarity.

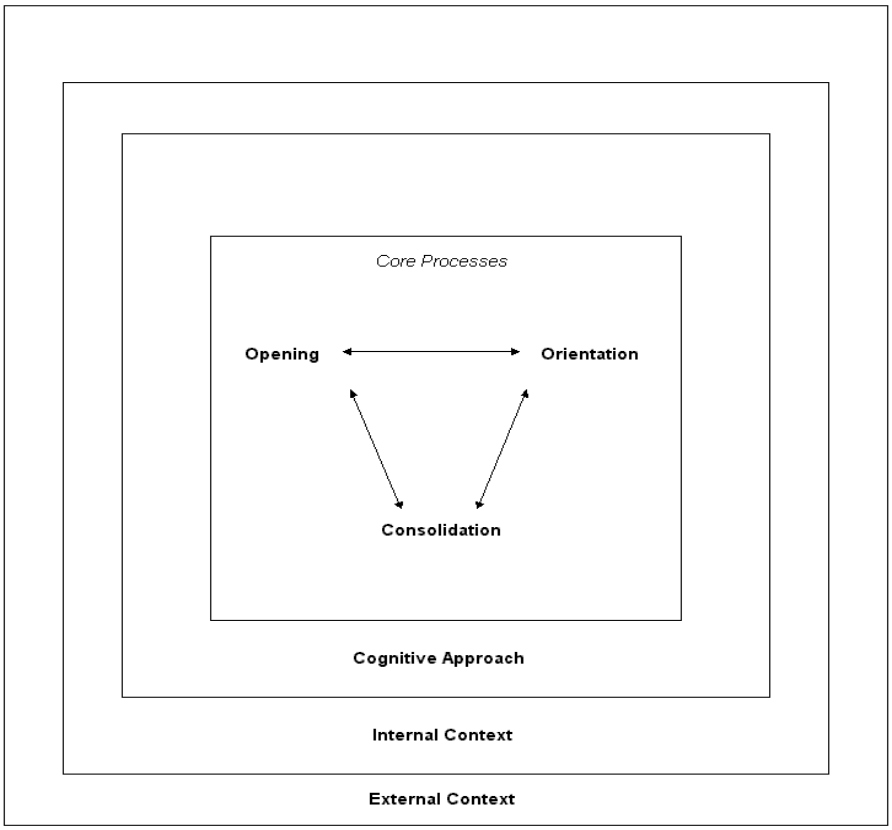


Figure 2.1: Nonlinear Model of information seeking-behavior, in Foster, A. (2004), "A Nonlinear Model of Information-Seeking Behaviour", Journal of the American Society for Information Science and Technology, 55(3), p.232.

Foster states that cognitive approach *"… describes aspects of the mode of thinking observed in the participants, a willingness to identify and use information that might be relevant to an inter-disciplinary problem."* (2004, p. 233) He goes on to discuss that there are four types of cognitive approach, which are summarised below:

- Flexible and Adaptable – this shows the ability to adapt to the many different information sources and cultures ("*… in an interdisciplinary field.")*
- Openness – showing that participants are willing to be non-judgemental in assessing information sources, disciplines and ideas as viable until proved otherwise.
- Nomadic Thought – similar to openness, but going on to embrace *"…the process of thinking about a topic in many diverse ways to find the information needed in locations and ways remote from the original idea"*, being prepared to go away from their regular information sources and seek out new ones.
- The Holistic Approach – this was considered to be important in "…grasping and incorporating concepts from diverse areas and bringing them together either as an answer or to generate new questions and information searching directions."

(Adapted from Foster, 2004, p.233)

Internal and external context are the range of factors affecting a person's information search, including Time, Project, Navigation, Social, and Organisational Access within external context and Knowledge and understanding, Feelings and thoughts, and Coherence under the umbrella of internal context.

Foster has since refined the original model, (Foster and Urquhart, 2012) which is discussed in section 3.2.1, as part of a discussion of how the model is applied and tested within this study.

Many factors affect HIB, including financial constraints, time constraints, intrinsic and extrinsic motivations. This study intends to consider the effects of peer and family influences on HIB, within Foster's framework.

2.12 Summary

This chapter demonstrates the wide and varied ELIS behaviour literature available, due to the huge amount of research completed over the last few decades. It is an interesting area of human behaviour and continues to be researched.

While the information seeking behaviour literature is fairly comprehensive, there are few reported studies which have considered the influence of family and peers on information seeking in everyday life situations. The literature search did not identify any works which considered environmental information seeking and there is also a gap in the literature of research on non-work, non-task specific work and work with more than one generation of participants. This study partially closes these gaps.

Chapter Three: Methodology

3.1 Research Philosophy and Methodological Approach

The theoretical requirements were to identify the information behaviour of individuals at different points in the life cycle and relate this to the Nonlinear-Evolutionary Framework, in particular comparing the effects of family or household influences and of peer group influences.

As stated previously, the Nonlinear-Evolutionary Framework is the theory that human information seeking behaviour evolves over a person's life and information seeking events, rather than remaining as a specific set of steps that are followed each time the person seeks information. (See Section 2.11 and Foster 2004, 2005, 2005a; and Foster and Urquhart 2012, for more details.) Relating real world behaviours to the framework required qualitative and quantitative analysis.

The research aim was to explore the Nonlinear Evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group.

The objectives of the research were to:

1. Explore information seeking influences through examination of information seeking incidents in the family or household setting.
2. Identify individual information seeking behaviour as it relates to environmental and recycling issues.
3. Identify sources of information used for passive and active information seeking by individuals.
4. Identify generational differences in information seeking behaviour and examine intra-generational nature, extent and influence of information transactions between different generations of network members.
5. Identify and examine what influence inter-generational differences and linkages have on information seeking behaviour.

Therefore the central research question for this study is:

> "What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?"

In order to answer the research question interviews were conducted to determine the information behaviour of a sample population. These were semi-structured interviews which concentrated on specific occasions where the participants had

sought information on the environment or recycling. The interviews were recorded and fully transcribed. The transcriptions were then made anonymous and analysed using QSR NVivo10 software. The interviewing process is covered in detail later in this chapter.

Several areas of research were explored in depth. These were broken down into subsidiary questions to the main research question, as follows:

- What influences the initial information seeking?
- For what purposes is information sought?
- What sources are used?
- How is information sought? - A detailed breakdown of methods.
- How is the retrieved information used?
- What influences information seeking behaviour?
- How does this impact on information seeking behaviour?

As previously stated, the aim of this research was to explore the Nonlinear-Evolutionary framework for human information seeking behaviour put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group. Lincoln and Guba state that *"All theories, including methodological theories, are constructions."* (1985, p. 89) They go on to say that

> "… reality constructions cannot be separated from the world in which they are experienced and that any observations that might be made are inevitably time – and context-dependent. No phenomenon can be understood out of relationship to the time and context that spawned, harboured, and supported it." (1985, p. 189)

Lincoln and Guba (1985) also state that defining the limits of a study is beneficial for two main reasons – "*First, such focusing establishes the* boundaries *for a study… Second, such focusing effectively determines* inclusion-exclusion criteria *for new information that comes to light."* (1985, pp. 227 – 8, original emphasis)

3.1.2 Theoretical Paradigms

Saunders, Lewis and Thornhill (2012) suggest that a paradigm *"… is a way of examining social phenomenon from which particular understandings of these phenomena can be gained and explanations attempted."* (p. 140 – 141)

Lincoln and Guba suggest that the naturalistic paradigm is *"… the paradigm of choice"* for virtually all socio-behavioural research. (1985, p. 260) They go on to say that this is because *"… naturalistic inquiries may conveniently be divided into three*

phases: orientation and overview, focused exploration, and member checks and closure." (1985, p.265)

Lincoln and Guba state that *"The history of humankind is replete with instances of attempts to understand the world."* (1985, p. 14) One such instance is examining reading – in one method, the whole language model, reading is viewed as *"… a process ongoing in the learner's head in interaction with his or her environment and in view of earlier experience,"* (Lincoln & Guba 1985, p.181) which is also applicable to information seeking, as both may be described in the way reading is described here by Lincoln and Guba as *"a complex and dynamic process,"* although it is treated as a static set of skills in many methods. (1985, p. 181)

Lincoln and Guba define a paradigm as *"… a systematic set of beliefs, together with their accompanying methods."* (1985, p. 15) They cite Patton as saying that *"A paradigm is a world view, a general perspective, a way of breaking down the complexity of the real world."* (1985, p. 15)

This research study took their paradigm, Naturalistic Inquiry as the theoretical paradigm within which to explore the information behaviour of family and household members in relation to recycling and green issues as it seemed to offer the best fit to the research.

One of the reasons for this decision is that researchers, as individuals, *"…are externally interconnected with other people and the world around them. When people interact, they affect each other."* (Lincoln and Guba, 1985, p. 62) These researchers bring their own unique perspective to their research, which in turn decides the methodological approach taken. However, as Burrell and Morgan state, *"Different ontologies, epistemologies and models of human nature are likely to incline social scientists toward different methodologies."* (1979, p. 2)

Thus it was necessary to look at alternative methods and models to assess and ensure the best fit to this research study.

3.1.3 Metatheories, theories and models

Vakkari (1994) states that *"Metatheories provide guidelines and strategies for understanding social phenomena and suggest ways to approach these phenomena. They guide us in talking about or conceptualizing the events and processes that exist in the social world."* (p.5), while Tuominen, Talja, and Savolainen (2002) suggest that

> "The term 'metatheory' refers to the often unarticulated premises upon which empirical research and theorization is based. Metatheories, for example, constructivism,

> are broader and less specific that theories: they are orientation strategies to the world (Vakkari, 1997). They bring into researchers' view a specific research object, and a specific way of conceptualizing, thinking about, and studying this object. Different metatheories build different, even contrasting, research objects and research programs. In short, a metatheory enables researchers to determine what kinds of entities, for example, information, knowledge, users, and information systems, are." (p. 272)

They go on to suggest that there have been essentially three meta-theories, which have historically formed a continuum, (p. 279) and using a social constructionist viewpoint, describe these meta-theories as

- The information transfer model
- Constructivism
- Constructionism

While these theories have their roots in the social construction of knowledge research field, they are related closely to and used widely within the information science research area.

Tuominen, Talja, and Savolainen (2002) go on to discuss the various names by which these meta-theories are also referred to by other scholars, such as Ellis's (1996) physical and cognitive paradigms; Hjørland (1998) who calls the meta-theories *"…empiricism, rationalism, and historicism"*; and Gergen (1999). Tuominen, Talja, and Savolainen (2002) posit that *"… the information transfer model closely corresponds to Ellis' physical paradigm and Hjørland's empiricism"* (p. 272), which they say Hjørland describes as *"... applied research that does not build on specific theories but rests on more or less unconscious metatheoretical assumptions – has been typical for information retrieval research."* (p. 272) Talja, and Savolainen go on to discuss the fact that

> "In constructionism, language is seen as constitutive for the construction of selves, and formation of meanings, not merely something that influences thinking. The primary emphasis is on discourse as the vehicle through which the self and the world are articulated, and on the way different discourses enable different versions of selves and reality to be built." (2002, p. 273)

Tuominen, Talja, and Savolainen (2002) also quote Hjørland (2002), who, they suggest *"… has similarly stressed that all information seeking takes place within the boundaries of specific discourses, discourse communities, paradigms, ontologic, and epistemic positions."* (p. 279) Foucault (1970) describes an *"… original and inerasable relation between words and things;"* (p. 337) suggesting that in his view, there is an interlinking in the way in which ideas and knowledge are formed from the

stimuli and inputs of the world around us, as well as from the actual words and information we receive.

Frey, Botan and Kreps (1999) define naturalistic inquiry as *"... research that focuses on how people behave when they are absorbed in genuine life experiences in natural settings."* (p. 1/4), while Patton (2002) defines naturalistic inquiry as *"Studying real-world situations as they unfold naturally; non-manipulative and non-controlling; openness to whatever emerges."* (p. 40) as well as having a "… *lack of predetermined constraints on findings."* (p. 40) Patton (2002) goes on to say that *"Cases for study… are selected because they are "information rich" and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the phenomenon, not empirical generalization from a sample to a population."* (p. 40) Patton further states that *"The researcher has direct contact with and gets close to the people, situation, and phenomenon under study; the researcher's personal experiences and insights are an important part of the inquiry and critical to understanding the phenomenon."* (2002, p. 40)

Winter, (2000) suggests that *"Within the qualitative paradigm, interpretation is typically viewed as an inextricable (and, indeed, unavoidable) element of data collection"* (para. 15, no page number available) going on to suggest that *"… qualitative research attempts to 'pick up the pieces' of the unquantifiable, personal, in depth, descriptive and social aspects of the world."* (para. 27, no page number available)

Winter, (2000) also posits that

> "… qualitative research embodies a vast and evolving body of techniques that can be modified or developed as the research demands. What these vast range of research methods and techniques demonstrate is that:
>
> "... [A] method in itself is neither valid nor invalid; methods can produce valid data or accounts in some circumstances and invalid ones in others." (Maxwell, 1992, p. 284)
>
> Therefore, since validity is not a feature of a particular methodology, process or test, within qualitative research all that remains is how representative the description is and how justifiable are the findings." (paras. 31- 32, no page numbers available)

Williamson (2005) discusses social constructionist theory, as do Tuominen and Savolainen (1996), who state that *"[Dervin] points out that it is possible to study information use as constructive action. […] The essential idea of social construction is stated by Rom Harré (1993, p58.) as '… the primary human reality is persons in conversation.' "* (p.81) Rom Harré's work spans many areas, including sociology and

philosophy. In the 1970s he was active in the field of critical realism as well as making significant contributions to the understanding of the social self in microsociology, which he called “ethogenics.” Ethogenics considers the ways in which a person places significance on their actions whilst also taking into account the social structure in their situation. Harré (1983) states

> "All that is personal in our mental and emotional lives is individually appropriated from the conversation going on around us and perhaps idiosyncratically transformed. The structure of our thinking and our feeling will reflect, in various ways, the form and content of that conversation. The main thesis of this work is that mind is no sort of entity, but a system of beliefs structured by a cluster of grammatical models. The science of psychology must be reformed accordingly." (p. 20)

Ethogenics is a method of studying the personal sense-making that a person undertakes on an everyday basis in order to live in society, which has links to Dervin’s later research in this area. Tuominen and Savolainen go on to suggest that *“The basic idea of social construction is [thus] the constructive nature of language use. When we talk and write, we produce and organize our social reality.”* (1996, p. 82)

Tuominen and Savolainen (1996) state that Dervin’s work on communitarianism forms the background for their social constructionist approach, in that communitarianism’s basic assumption is that *“… knowing is a processual negotiation of meaning between people.”* (p. 91). They further discuss that within communitarianism, *“… communication is not conceived of as transfer of stable information packets, but as processual interaction which constructs and produces events and states of things rather than neutrally describing them.”* (1996, p. 92)

Both Williamson (2005) and Tuominen and Savolainen (1996) refer to Berger and Luckmann (1967) who state that *“… reality is socially constructed and that the sociology of knowledge must analyse the process in which this occurs.”* (1967, p. 13) They continue by defining reality and knowledge simply and giving examples of difference in views between the “man on the street” and the “philosopher” (in their opinion a sociologist!). Berger and Luckmann (1967) suggest that a social constructionist theory is one that looks at *“… knowledge that guides conduct in everyday life.”* (p. 33) They further state that *“Everyday life presents itself as a reality interpreted by men and subjectively meaningful to them as a coherent world.”* (1967, p. 33) They also assert that

> “The world of everyday life is not only taken for granted as reality by the ordinary members of society in the subjectively meaningful conduct of their lives. It is a world that

originates in their thoughts and actions, and is maintained as real by these." (1967, p. 33)

Berger and Luckmann go on to discuss the use of signs and the use of objects as signs in order to express ideas, opinions and knowledge and otherwise share the *"reality of everyday life."* (1967, p. 43) They suggest that *"A sign may be distinguished from other objectivations by its explicit intention to serve as an index of subjective meanings."* (p.50) Their use of the term "index" here is as an indication of the intention of the actor, linked to the Peircean notion of an index being a symbol of a real relationship between objects and their meanings. Berger and Luckmann (1967) go on to say that *"Language, which may be defined here as a system of vocal signs, is the most important sign system of human society."* (p.51) suggesting that language is used to disseminate, as well as collect, knowledge. They also posit that *"… a large part of the social stock of knowledge consists of recipes for the mastery of routine problems."* (1967, p. 57) Talja (1996) states that *"Language is seen as the primary shaper of observations and interpretations of the world.[…] Information is about what people do with language and what language does to people."* (p. 71) and refers to Williams' 1977 notion that *"Without language we cannot think. Without words there is no consciousness."* (Talja, 1996, p. 71) Williams follows this notion with a discussion of how language defines all things, including people and information, (Williams, 1977, pp. 21- 44) from which Talja draws the conclusion that *"… meanings, values and ethical principles are not constructed by individuals, they are constructions that have been created in social interaction."* (1996, p.71) This theory suggests that a person's social landscape is formed by the constructs of consciousness they form themselves, based on their personal interactions. Foster's 2004 model posits that the internal and external context in which a person seeks information will have an effect on their information seeking behaviour. This is borne out by Talja (1996) who suggests that *"Theories of the nature of information and its users are metatheories which guide the formation of concrete research programs in information seeking research."* (p. 67) and *"… presents the discourse analytic viewpoint, the "theory of knowledge formations" as opposed to the cognitive viewpoint or the information-man theory."* (p. 67) The cognitive viewpoint does not fully incorporate the social aspects of information seeking and since *"It is widely recognised that both individual information needs and institutional information access are socially conditioned."* (Talja, 1996, p. 67) this viewpoint is therefore considered

flawed. As noted by Capurro (1992, p. 83) the *"…central concept in the cognitive viewpoint is not information but man. It is a theory about the* information man - *about the* individual *as a seeker and interpreter of information."* [emphasis in original], which means that as Talja (1996, p. 71) suggests, in order to study an information process, one must study the individual user's mental and cognitive processes and their *"… social and interactional processes of sense-making."* Talja (1996, p. 67) also suggests it is difficult to study the *"… socio-cultural context of information processes",* going on to state that *"… each individual receives and interprets information in his or her own way, affords it personal meaning. The reception of information is mediated by a person's existing knowledge state and knowledge structures,"* (1996, p. 69) Talja further suggests that information is generated by individuals and each person chooses whether to internalise that received information and that if they do so, this affects the individual's knowledge level, adding that *"Knowledge consists of a mix of scientific or expert knowledge and an unconscious, selective and culture-specific background assumptions."* (1996, p. 73)

Lincoln and Guba state that *"Every act of theory development, whether grounded or a priori, is creative in nature, going well beyond the empirical data or conceptual imaginings that suggested it."* (1985, p. 207) They go on to discuss *"Emergent design"* noting that within Naturalistic Inquiry,

> "… designs must be emergent rather than preordinate: because meaning is determined by context to such a great extent; because the existence of multiple realities constrains the development of a design based on only one (the investigator's) construction; because what will be learned at a site is always dependant on the *interaction* between investigator and context, and the interaction is also not fully predictable; and because the nature of mutual shapings cannot be known until they are witnessed. " (1985, p. 208, original emphasis)

Lincoln and Guba (1985) credit Glaser and Strauss with having coined the term Grounded Theory. Glaser and Strauss describe Grounded Theory as a theory that will

> "Fit the situation being researched, and work when put into use. By "fit" we mean that the categories must be readily (not forcibly) applicable to and indicated by the data under study; by "work" we mean that they must be meaningfully relevant to and be able to explain the behaviour under study." (1967, p. 3)

Patton states: "*Qualitative inquiry is especially powerful as a source of grounded theory, theory that is inductively generated from fieldwork, that is, theory that emerges from the researcher's observations and interviews out in the real world*

rather than in the laboratory or the academy." (2002, p. 11) Patton further describes qualitative designs as being naturalistic:

> "… to the extent that the research takes place in real-world settings and the researcher does not attempt to manipulate the phenomenon of interest (e.g., a group, event, program, community, relationship, or interaction). The phenomenon of interest unfolds naturally in that it has no predetermined course established by and for the researcher such as would occur in a laboratory or other controlled setting. Observations take place in real-world settings and people are interviewed with open-ended questions in places and under conditions that are comfortable for and familiar to them." (2002, p. 39)

Patton continues, quoting Egon Guba's 1978 work on naturalistic inquiry in which Guba

> "… identified two dimensions along which types of scientific inquiry can be described: (1) the extent to which the scientist manipulates some phenomenon in advance in order to study it and (2) the extent to which constraints are placed on outputs, that is, the extent to which *predetermined* categories or variables are used to describe the phenomenon under study. He then defined "naturalistic inquiry" as a "discovery-oriented" approach that minimizes investigator manipulation of the study setting and places no prior constraint on what the outcomes of the research will be." (2002, p. 39, original emphasis)

3.2 Methodological Choices

3.2.1 Initial Research Design

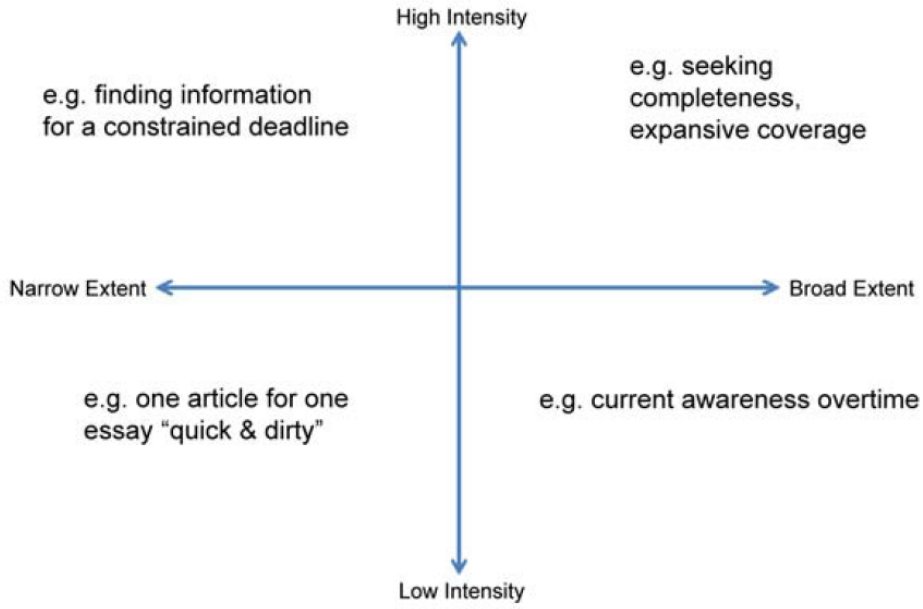
The initial research design for this project was to interview a representative sample of people living in the Ceredigion area on their information use regarding recycling and the environment. The reasons for specifying a particular area were partly logistical and partly to enable the research to have a specificity factor. The Ceredigion area is a rural area which also includes a major town, enabling the researcher to compare rural and more urban environments. More information on the sample population is in Section 3.5.3. The topic of recycling and the environment was chosen due to the fact that the area had recently had a change to the refuse collection system, which meant that the researcher could expect a rich set of data to emerge from the interviews. Recycling and the environment had not been studied in an ELIS context previously and the topic is also not sensitive from the perspective of interviewing persons below the age of eighteen.

Foster's nonlinear evolutionary information seeking behaviour framework, which was described in Section 2.11, was centred on academic workplace information seeking and this study seeks to identify if the model is transferable to non-workplace information seeking or everyday life information seeking. It is expected that the results of this study will show that some of the information seeking activities which

were prevalent in Foster's original dataset will not be so in this study, while others will be more in evidence.

Foster's revised nonlinear information seeking model, (Foster and Urquhart, 2012) now has the three core processes which are shown as having interactions with intrinsic and extrinsic context. Intrinsic and extrinsic context have replaced the original nested concepts of cognitive approach, internal context and external context, reflecting that they are interactional in respect of information seeking activity. Two new scale parameters are also added, measuring the intensity and duration of particular information seeking activities:

> "There is non-linearity and complexity as in Foster's original definitions, but these are best interpreted with the incorporation of two additional scale parameters: extent and intensity […], with extent recording span or duration of activity and intensity recording a superficial through to intense activity on each element.
>
> This was particularly highlighted with the undergraduate student descriptions of search strategies that were far briefer and focused on the required outcome, moving swiftly from opening to consolidation with little evidence of orientation as a process that takes time." (p. 800)



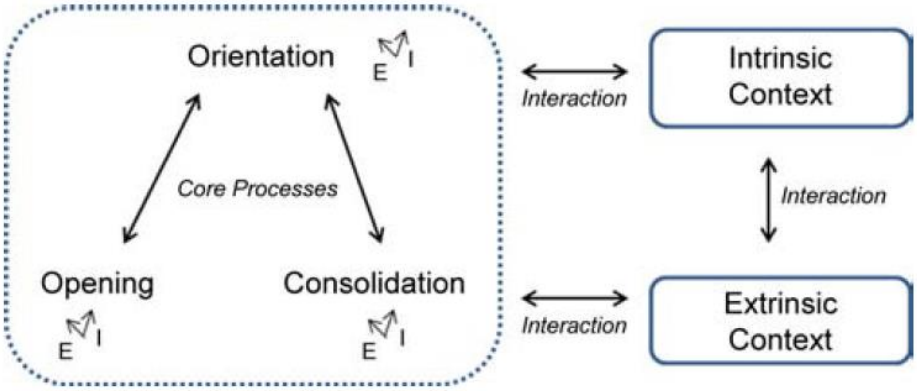


Figure 3.1 : Foster's revised nonlinear information seeking model, shown with the envisaging scales of extent and intensity. (Foster and Urquhart, 2012, p. 801)

This revision recognises that more than one information seeking activity may be occurring at any one time and allows for *"…an incrementally enhanced, more transferable model of behaviour rather than a radical departure."* (Foster and Urquhart, 2012, p. 800) The revised model is reproduced above.

Internal and external context in the original model are the range of factors affecting a person's information search, which are reorganised in the revised model, becoming intrinsic and extrinsic context. These now combine cognitive approach and intrinsic context, with Foster and Urquhart stating that *"This new category represents a group of variables expressing aspects of ways of thinking, experiencing, and interacting with information problems."* (2012, p.798) The new variables are broader than those in the original model, becoming Personality and Learning, Knowledge, Affect, and Motivation, although they still cover the same areas, with the addition of motivation, which was assumed to be present in information seeking in the original model. Foster and Urquhart go on to say that *"Extrinsic context as an element of the model emphasises that an information seeker is not isolated from the multiple factors surrounding their information seeking."* (2012, p. 799)

This study will consider how ELIS activities and the information seeking behaviours which were used by the research participants fit within Foster's revised model and examine the influences exerted on information seeking activities by household members and peer groups fit within the extrinsic context section of the model.

Semi-structured interviews were undertaken as this enabled the researcher to give the participants an opportunity to take a more active part in the interview than simply answering a prescribed set of questions. It also gave the opportunity to use

critical incident techniques within the questioning process, as it was felt that the participants would feel more at ease and that richer data would be gathered by using this approach. This is supported by Bates (2004) who suggests that narrative and episodic interviews are particularly useful in studying ELIS behaviour. Bates continues that the narrative interview allows each study participant to *"… describe in their own words their information needs and information seeking experiences."* (2004, p. 16) Lincoln and Guba posit that *"An interview, as Dexter (1970) has suggested, is a conversation with a purpose."* (1985, p. 268), while Kvale discusses interviews as *"… a construction site for knowledge."* (2007, p. 7) Kvale goes on to describe a *"semi-structured life world interview … as an interview with the purpose of obtaining descriptions of the life world of the interviewee with respect to interpreting the meaning of the described phenomena."* (2007, p. 7)

The next part of the research design process was to identify and approach potential interview participants and then arrange the interviews. This was done in several ways, which are detailed in Sections 3.5.3.1 and Section 3.5.3.2. It was hoped at the outset of the research to undertake a "snowball" interview system, which would have generated a continuously increasing number of potential interviewees, with the first interviewee introducing the next one or two participants and these people introducing the next ones and so forth. This would have entailed the primary interview participants introducing the researcher to their network contacts – the people they used as information sources. Due to the type of information seeking behaviour which was being investigated, most people did not have an extensive network of this kind, so although approximately half of the second set of interviewees was drawn from this type of sampling, the remainder of the second set of interview participants were essentially first level interviewees, drawn from other sources, which are covered in detail in Section 3.5.3.2.

Diagram of the research process.

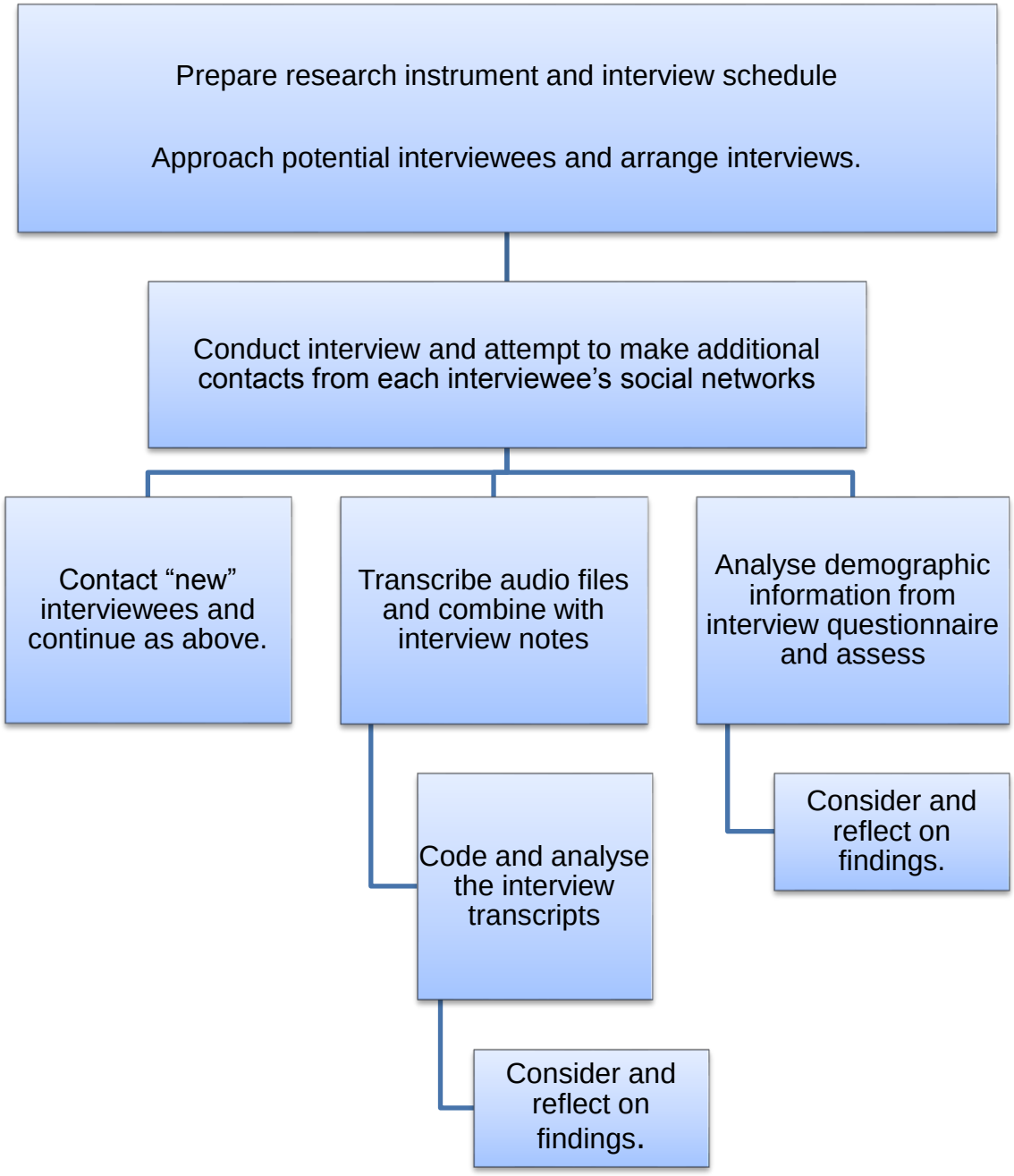


Figure 3.2: Research Process Diagram

3.2.2 Main study (changes)

As mentioned above, the initial plan was to conduct a set of primary interviews and then do some follow-up interviews. This became increasingly difficult due to the time it took to arrange and then conduct the primary interviews. This was partly due to the logistical constraints of conducting the research on a part-time basis and partly because the original expectation was that participants would have rich networks of

personal information sources and that the researcher would be able to tap into these and interview some of these contacts in a snowball effect. Unfortunately, recycling and environmental issues did not generate the rich networks anticipated and thus additional primary interviewees were sought from the area. The changes made due to this factor are detailed in Sections 3.5.3.1 and 3.5.3.2.

An examination of the comparative strengths of social networks within households, the social interconnections of individuals, as well as individual's roles and influence within social networks was explored and this is discussed in Chapter Six.

Another change that was made as a result of one of the initial interviews was that it was beneficial to interview the younger participants in pairs or groups of three. This was because they were often much more forthcoming when speaking as part of a group than they were as an individual. This was possibly in part as they "competed" against one another to remember and relate instances of information seeking behaviour which they would not have done alone.

3.3 Strategy

3.3.1 Theoretical approaches to information behaviour

According to Winter *"Quantitative research limits itself to what can be measured or quantified and qualitative research attempts to 'pick up the pieces' of the unquantifiable, personal, in depth, descriptive and social aspects of the world."* (2000, para. 27, no page number available) Patton suggests that *"… methods… are dependent on context."* (2002, p. 12) and that *"Qualitative methods facilitate study of issues in depth and detail. Approaching fieldwork without being constrained by predetermined categories of analysis contributes to the depth, openness, and detail of qualitative inquiry."* (p. 14) He continues *"… qualitative methods typically produce a wealth of detailed information about a much smaller set of people and cases. This increases the depth of understanding of the cases and situations studied but reduces the generalizability."* (2002, p. 14)

Patton also discusses the fact that in quantitative research, *"The focus is on the measuring instrument – the test items, survey questions or other measurement tools. In qualitative inquiry,* ***the researcher is the instrument****."* (2002, p. 14) [emphasis in original] He goes on to say that *"Pure description and quotations are the raw data of*

qualitative inquiry." (2002, p. 26) Therefore qualitative methods were pursued in this study.

There are a variety of qualitative methods which may be appropriate, however, this study considered naturalistic inquiry to be the most suited to the topic and context of the research. The reasons for this approach rather than any other will be discussed after a brief analysis of other methods and the reasons these methods were not used for this study.

Pickard (2007) details eight research methods; case studies, surveys, experimental research, ethnography, Delphi study, action research, historical research, and grounded theory.

Case studies are described by Pickard as *"… an in depth analysis of a single case."* (2007, p. 110), which was thus not suited to this research as the focus was on more than one individual.

Surveys were deemed too prescriptive for this study as they consider relationships between specific variables and need to be standardised across cases, while this study sought to be inductive, using semi-structured interviews to obtain rich data from study participants.

Experimental research requires *"… a controlled research situation."* (Pickard, 2007, p. 103). This method was not used as it would not be possible to control all the external variables involved in a person's information seeking, which would lead to at best, tenuous results. It is fair to suggest that it would be almost impossible for a researcher to be aware of all the variables affecting a person at any given moment, thus making measurement of error margins an impossible task.

Ethnography aims to combine the researcher's views with that of the research participants in order to describe a social setting. The main method for this type of research is participant observation, which reduces the cultural effect of the insider's view, while adding the deeper and fuller view of the researcher. This method is extremely time intensive and was not possible within the time-frame and scope of this research study.

Delphi study brings together a panel of experts in order to predict future trends. This research was seeking to gather the information seeking behaviour patterns of a group of locally based "non-experts", and thus this method was not considered.

Action research was devised as a method in which to use and analyse interventions within a group of research participants. This study was not planning any interventions and action research as a method was thus not considered.

Historical research *"… is concerned with reconstruction the past, identifying pieces of a puzzle and putting them together to provide insight and understanding of a situation, event or process."* (Pickard, 21007, p. 143) As this research study was considering current information behaviour and influences, this method was also not considered.

Pickard (2007, p. 156) quotes Charmaz, who suggests that grounded theory *"… is an approach that uses simultaneous data collection and analysis."* (Charmaz, 2006, p. 20) Bronstein cites (Strauss & Corbin 1990) and (Creswell 1997) when he describes grounded theory thus:

> "A grounded theory is one that is inductively derived from the study of the phenomena it represents. One does not begin with a theory and then prove it. Rather, one begins with an area of study and what is relevant to that area is allowed to emerge (Strauss & Corbin 1990). The method consists of identifying incidents, events and activities and coding them into their respective categories by constantly comparing them to the properties of the emerging category to develop and saturate the category. Once an initial set of categories is developed, the researcher identifies a single category as the central phenomenon of interest and begins exploring the relationships among categories (called axial coding), the causal conditions that influence the central phenomenon, the strategies for addressing the phenomenon, the context and intervening conditions that shape the strategies and the consequences of undertaking the strategies. In the last phase of analysis, the selective coding phase, a theory is built; the researcher creates a coding paradigm or a theoretical model that portrays the relationships between the axial coding categories (Creswell 1997)." (2007, para.11, no page number available)

Although this study did not set out to prove or disprove a hypothesis, there was a specific topic under investigation, meaning that it would not be possible to fully pursue grounded theory as there were already investigative constraints in place which would prevent a full exploration of the grounded theory method.

Other methods not discussed by Pickard (2007) include content analysis, and negative case analysis and analytic induction.

Rosengren (1981, p.34, quoted in Lincoln and Guba, 1985, p. 337) describes the field of content analysis as follows:

> "In general, content analysis applies empirical and statistical methods to textual material. Content analysis particularly consists of a division of the text into units of meaning and a quantification of these units according to certain rules. […] Holsti (1969) modifies this definition: content analysis is an objective, systematic, and general description of the manifest content of a text." (Lincoln and Guba, 1985, p. 337)

Content analysis is a more quantitative approach, with outcomes such as incidence and frequency hierarchies, rather than allowing for a more in-depth exploration of the context and meaning of the interview transcripts, as confirmed by Agosto and Hughes-Hassell who state that "In qualitative research the number of occurrences of an incident is not as significant as the context surrounding it." (2005, p. 148) There are some elements of qualitative content analysis which were pursued in this study, including *"… reorganisation of the codes in the frequency hierarchy into more meaningful arrangements by enabling the interviewers to probe the context and significance of the various category codes."* as suggested by Agosto and Hughes-Hassell. (2005, p.148) Zhang and Wildemuth suggest that qualitative content analysis *"… allows researchers to understand social reality in a subjective but scientific manner."* (2009, p. 1) Lincoln and Guba state that "*Thus naturalistic data processing may be guided by but should not be constrained by the conventional modes of content analysis; while there is much commonality there are also many crucial differences*." (1985, p. 339)

Negative case analysis and analytic induction appear similar in that they both seek to include a shared outcome for all the cases studied by trying to create a theory hypothesis that includes all the cases studied, while *"… developing and adjusting hypotheses as the research continues"* (Goetz and LeCompte, 1981, p. 57) or as Glaser and Strauss describe it, a *"… universally applicable theory of causes"* (1967, p. 104)

This study was not seeking to create a universal theory to fit all the participants studied, thus neither of these theories was applied to the research.

3.3.2 Naturalistic Inquiry

To enable the researcher to collect rich data, a naturalistic inquiry approach was taken in this study. Naturalistic inquiry was described by Lincoln and Guba in 1985, as a way of obtaining rich qualitative information. They state that "… *in naturalistic inquiry, data processing is a continuously ongoing activity, making possible the meaningful emergence or unfolding of the design and the successive focusing of the study.*" (1985, p. 11) This is partly due to the preservation of context of interviewing research participants in a natural, every-day environment. Patton defines naturalistic inquiry as *"Studying real-world situations as they unfold naturally; non-manipulative*

and non-controlling; openness to whatever emerges (lack of predetermined constraints on findings).” (2002, p. 40)

Naturalistic Inquiry is a paradigm within which to study and observe (the information seeking behaviour of) people in their usual environments. It provides examples of naturally occurring behaviour as opposed to contrived or constrained experimental behaviour. The reasoning behind using this approach is that it is possible to investigate people’s information seeking behaviour in their own everyday life situation and is therefore more likely to yield fuller, more detailed responses than if the participants are removed from their familiar surroundings.

Patton states that

> “Naturalistic inquiry designs cannot usually be completely specified in advance of fieldwork. While the design will specify an initial focus, plans for observations, and initial guiding interview questions, the naturalistic and inductive nature of the inquiry makes it both impossible and inappropriate to specify operational variables, state hypotheses, or finalize either instrumentation or sampling schemes. A naturalistic design unfolds or emerges as fieldwork unfolds.” (2002, p. 44)

Patton goes on to say that *“Qualitative inquiry is particularly oriented toward exploration, discovery and inductive logic.”* (2002, p. 55) That is, this type of enquiry starts with specific observations and moves to building general patterns.

Patton also states that *“Inductive analysis is built on a solid foundation of specific, concrete, and detailed observations, quotations, documents, and cases.”* (2002, p. 58) and that *“Naturalistic Inquiry preserves natural context.”* (2002, p. 62) Lincoln and Guba point out that within emic research, which involves reconstructing participants’ perceived reality constructions, *“… context is all important in assigning meaning to data.”* (1985, p. 212) Laboratory experiments are performed deliberately to be context free, while *“… qualitative inquiry elevates context as critical to understanding.”* (Patton, 2002, p. 62) Patton also stipulates that part of this context preservation is connected to the researcher’s involvement:

> “Personal experience and engagement: The researcher has direct contact with and gets close to the people, situation, and phenomenon under study; the researcher’s personal experiences and insights are an important part of the inquiry and critical to understanding the phenomenon.” (2002, p. 40)

Lincoln and Guba discuss the concept that although reality may only be studied holistically it is constructed of multiple realities and this study will therefore diverge, raising more questions than answers, *“… some level of understanding* (verstehen) *will be achieved.”* (1985, p. 37) [their emphasis] Lincoln and Guba later define the concept of “*verstehen”* as the *“(understanding, or meaning experienced in*

situations).” (1985, p. 206) The verstehen concept also refers to the notion that each person will have individual experiences, even within the same situation, as each individual’s viewpoint is necessarily different to every other person involved.

Patton also states that “Verstehen *means “understanding” and refers to the unique human capacity to make sense of the world.”* (2002, p. 52) He continues “*The* Verstehen *doctrine presumes that since human beings have a unique type of consciousness, as distinct from other forms of life, the study of human beings will be different from the study of other forms of life and non-human phenomena.*” (2002, p. 52) Patton goes on to assert that because humans have *“… purposes and emotions; they make plans, construct cultures and hold values that affect behaviour.* … [they] *must be understood in a manner different from other objects of study.”* (2002, p. 52) He continues, stating that *“The Verstehen tradition stresses understanding that focuses on the meaning of human behaviour, the context of social interaction, an empathic understanding based on personal experience and the connections between mental states and behaviour*.” (2002, p. 52)

Lincoln and Guba discuss the fact that case studies are *“… the primary vehicle for emic inquiry. … naturalistic inquiry is directed toward the emic posture …, that is, that the naturalistic inquirer tends toward a reconstruction of the respondent’s constructions (emic).”* (1985, p. 359) going on to reiterate that *“… the writer’s attempt to portray the constructions of respondents ought not to be confused with his or her own reconstructions.”* (1985, p. 365)

Lincoln and Guba describe five axioms and their characteristics, which encapsulate their naturalistic inquiry method. The five research axioms are:

- Reality
- Knower-known interaction
- Generalizability
- Causality
- Values

(Lincoln and Guba, 1985, p. 44)

These make a case for using naturalistic inquiry in this study, because these axioms provide the best fit for studying socio-behavioural phenomena. The OED defines an axiom as *“… a statement regarded as obviously true.”* Lincoln and Guba go on to describe the axioms as having fourteen characteristics, which are summarised for this study as follows:

- That the research should take place in the natural setting of the participant, as the *“…belief that the very act of observation influences what is seen, […] the*

belief that context is crucial in deciding whether or not a finding may have meaning in some other context as well;" (1985, p. 39)

- That the research is carried out using *"… humans as the primary data-gathering instruments"* as *"… all instruments interact with respondents [and objects] but that only the human instrument is capable of grasping and evaluating the meaning of that differential interaction;"* (1985, pp. 39-40) and that only people are able to judge these biases and account for them as much as is possible in an appropriate way.
- That the tacit or implied knowledge of the researcher is utilised (Spender (1996, p.67) suggests that tacit knowledge is *"… gained experientially"*, and due to being based on private personal experience is both incommunicable and is inseparable *"… from the processes of its creation and application")*
- That purposive sampling is undertaken and that qualitative methods are used
- That data analysis will be inductive, because *"…inductive data analysis is more likely to identify the mutually shaping influences that interact; and because values can be an explicit part of the analytic structure."* (1985, p. 40)
- That elements of grounded theory, including emergent design and negotiated outcomes may be used
- That reporting of the study will be done in a case study style, using *"ideographic interpretation"* in terms of the specific case due to context (1985, p. 42)
- That tentative applications are applied to the research findings – as it may not be applicable to generalise due to the results being *"…inductive data analysis is more likely to identify the mutually shaping influences that interact; and because values can be an explicit part of the analytic structure."* (1985, p. 42)
- That specific and focused boundaries are set
- That special criteria are set for trustworthiness as *"… conventional trustworthiness criteria* [… are] *inconsistent with the axioms and procedures of naturalistic inquiry."* (1985, p. 42)

(Summarised from Lincoln and Guba, 1985, pp. 39-44)

As Lincoln and Guba also explain:

> "… when experiments are done in laboratories, the experimenter is able to block or mask virtually everything that he or she wishes to exclude, and to introduce just those enablers that are desired. The otherwise complex milieu of the real world has been simplified to accommodate the investigator's interests. It is no wonder, then, that laboratory results are so often found to be nonreplicable in real situations." (1985, p. 154)

The objectives of the research, as stated above in Section 3.1 were all context based and as such, naturalistic inquiry allowed for the behaviours and the contexts to be examined together.

3.3.3 "Validity and Trustworthiness"

When using a naturalistic paradigm, the quantitative methodology's validity rules are not transferable. A different approach to ensuring validity and trustworthiness of the research findings is required. This was briefly alluded to in the previous section, but will now be discussed more thoroughly.

Lincoln and Guba discuss this in terms of their five naturalistic paradigm axioms; reality, knower-known interaction, generalizability, causality, and values. They posit that *"… conventional trustworthiness criteria […] [are] inconsistent with the axioms and procedures of naturalistic inquiry."* (1985, p. 42) Lincoln and Guba go on to suggest that

> "Conventional criterion of internal validity fails because it implies an isomorphism between research outcomes and a single, tangible reality onto which inquiry can converge; that the criterion of external validity fails because it is inconsistent with the basic axiom concerning generalizability; […] substitute criteria (called credibility, transferability, dependability, and confirmability) together with corresponding empirical procedures that adequately (if not absolutely) affirm the trustworthiness of naturalistic approaches." (1985, p. 43)

They base these assertions upon Guba's 1981 article, in which he details the four aspects of trustworthiness in the following table

Aspect	Scientific Term	Naturalistic Term
Truth Value	Internal Validity	Credibility
Applicability	External Validity / Generalizability	Transferability
Consistency	Reliability	Dependability
Neutrality	Objectivity	Confirmability

Table 3.1: Guba's Scientific and Naturalistic Terms Appropriate to the Four Aspects of Trustworthiness. (1981, p. 80)

Lincoln and Guba (1985) further explain that Guba (1981)

> "… proposes that these conventional formulations be replaced with four new terms that have a better fit with naturalistic epistemology; these he has named "credibility" (in place of internal validity), "transferability" (in place of external validity), "dependability" (in place of reliability), and "confirmability" (in place of objectivity). … [this] parallels (metaphorically speaking) the conventional rationale." (1985, p. 219)

Lincoln and Guba go on to state that *"The four terms … are introduced … to make clear the inappropriateness of the conventional terms when applied to naturalism and to provide alternatives that stand in a more logical and derivative relation to the naturalistic axioms."* (1985, pp. 300-1)

Each of these will be considered in the following sections, followed by an outline of how these safeguards were employed within this study.

3.3.3.1 Credibility

Credibility, as stated above, is the naturalistic equivalent of internal validity. This ensures that the research is believable and trustable. Lincoln and Guba suggest that credibility is established by the research being carried out *"… in such a way that the probability that the findings will be found to be credible is enhanced."* (1985, p. 296) and by demonstrating these findings by having them approved by the research participants, *"… the constructors of the multiple realities being studies"*, as Lincoln and Guba (1985, p. 296) define them.

Winter states that

> "Descriptive 'validity' is that which is concerned with the initial stage of research, usually involving data gathering. The central issue is factual accuracy in the informational statements that describe what was observed and experienced - what Runciman (1983) refers to as 'Reportage'." (2000, para. 13, no page number available)

Patton also discusses the fact that there are not any concrete standards for verifying qualitative analysis, as methods vary from research project to research project, but suggests a researcher should follow certain guidelines… *"In short, no absolute rules exist except perhaps this: Do your very best with your full intellect to fairly represent the data and communicate what the data reveal given the purpose of the study."* (2002, p. 433) although it should be noted that he continues by saying that *"… Applying guidelines requires judgment and creativity."* (2002, p. 433)

3.3.3.2 Transferability

Transferability is where an existing piece of research is applied to a new or different situation than that of the original research purpose, with the intention of replicating the results to show that the original results were generalizable. That is that they are appropriate to more than one specific instance. Lincoln and Guba posit that, *"… if there is to be transferability, the burden of proof lies less with the original investigator than with the person seeking to make an application elsewhere."* (1985, p. 298) and that *"… the responsibility of the original investigator ends in providing sufficient descriptive data to make such similarity judgments possible."* (1985, p. 298) They suggest that this is because the originator of the research will not know where future transferability might be sought.

There is also the concept that most behavioural phenomena are context bound and as such are not possible to be fully transferable to another, different set of circumstances.

3.3.3.3 Dependability

Dependability is the naturalistic equivalent to reliability - the ability to replicate a study. A naturalistic approach to this is to consider the changes which occur during or due to the study. Lincoln and Guba discuss the concepts of fidelity and structure. *"By "fidelity" is meant the ability of the investigator later to reproduce exactly the data as they become evident to him or her in the field;"* (1985, p. 240)

Guba suggests that to ensure dependability within a research study an audit trail enabling an external auditor *"… to examine the processes whereby data were collected and analysed, and interpretations were made"* should be produced, taking the form of documentation such as research notes. (1981, p. 87) This is borne out by Hammersley (1992, p.67, quoted in Silverman, 2000, p.9) who states that *"… reliability refers to the degree of consistency with which instances are assigned to the same category by different observers or by the same observer on different occasions."* (1992, p. 67) Silverman (2000, p.10) also quotes Kirk and Miller who argue *"… that in order to achieve reliability, researchers must document their procedures."* (1986, p. 72)

3.3.3.4 Confirmability

Confirmability is the ability to determine if something is factually correct. Lincoln and Guba state that *"Objectivity exists when an appropriate methodology is employed that maintains an adequate distance between observer and observed."* (1985, p. 300) Lincoln and Guba (1985, p. 300) also draw upon Scriven's (1971, pp. 95-96) definition of objectivity, in which it is the data themselves that become confirmable, rather than the characteristics of the investigator. Patton discusses objectivity and subjectivity by saying that both are considered as negative and somewhat discredited. He suggests it may be better to consider *"authenticity"* and *"trustworthiness",* by which Patton is discussing that the researcher's stance must be to collect data in such a way that a truthful representation of participant's views are recorded and the data is thus reliable. Patton goes on to say that the researcher must *"… adopt a stance of* neutrality *with regard to the phenomenon under study"* within *"… any credible research strategy"*. (2002, pp. 50-51) [Original emphasis] While this reiterates the point that within naturalistic inquiry, the researcher should not be attempting to prove a pre-determined hypothesis, it also stresses that the collected data needs to be provable and reliable in the sense of being true. Lincoln

and Guba also suggest that *"If objectivity is a useful criterion, fairness is even more so."* (1985, p. 173)

3.3.3.5 Validity and Trustworthiness and present study

Several methods were employed within this study to ensure validity and trustworthiness criteria were met, which are discussed in the following sections.

3.3.3.5.1 Member checking

Both Lincoln and Guba (1985) and Creswell and Miller (2000), discuss various procedures for ensuring validity and trustworthiness in qualitative research – one of these processes is what they both describe as *"member checking"*, where the research participants check the accuracy of their own interview transcripts, seeking to *"… actively involve participants in assessing whether the interpretations accurately represent them."* Lincoln and Guba describe one element of member checking as follows:

> "In order to demonstrate "truth value," the naturalist must show that he or she has *represented those multiple constructions adequately*, that is, that the *reconstructions* (for the findings and interpretations are also constructions, it should not be forgotten) have that been arrived at via the inquiry are *credible to the constructors of the original multiple realities.*" (1985, pp. 295–6) [Original emphasis.]

Another element of member checking the *"… validity of the constructions the interviewer had made"* discussed by Lincoln and Guba is that of summarising during and especially at the end of the interview, by saying things such as "*you said … did you mean…? am I right in thinking you mean…?*" They also posit that this can have the added benefit of prompting a respondent *"… to add new materials of which he or she is reminded on hearing the [interview] summary."* (1985, p. 271) Lincoln and Guba further state that *"The investigator who has received the agreement of the respondent groups on the credibility of his or her work has established a strong beachhead toward convincing readers and critics of the authenticity of the work."* (1985, p. 315)

In this research, ten per cent of the interview transcripts were also checked by the participants, all of whom reported that the transcripts were a valid record of the interview.

3.3.3.5.2 Triangulation

Another validity checking process detailed by Creswell and Miller is that of triangulation, "… *where researchers search for convergence among multiple and*

different sources of information to form themes or categories" (2000, p. 126) Firmin *et al.* (2016) quote Creswell (2012), showing they concur with his view that *"Indeed, triangulation, or using multiple data sources to examine a phenomenon or construct, has since been discussed as a key method of enhancing validity and reliability of qualitative analyses."* (p. 2) Triangulation has been carried out in the present research by interviewing a diverse set of individuals to gather data on these individuals' information seeking behaviours. This has produced a data set containing the "*multiple forms of evidence*" mentioned as desirable by Creswell and Miller. (2000, p.127) Flick describes this kind of triangulation as "*Within-methods triangulation*" and discusses the fact that it should bring together different sorts of data. (2007, p. 72) One way in which this type of triangulation was carried out in this study was by verifying with several respondents the information sources they used. During the interviews, a particular council publication was mentioned by the first few respondents – during subsequent interviews, the respondents were specifically asked about their use of this publication if they failed to mention it themselves.

Another area in which validity checking has been carried out in this research is with the comparison of the code book from this research to the code book of recent research carried out by Foster and Urquhart. (2012) Comparison of the two shows that there are certain similar types of information seeking behaviours which are endemic, regardless of the type of person or the context of the information seeking. However, Lincoln and Guba (1985, p. 308) discuss that in peer debriefing, wherein a peer evaluates the data analysis, the peer must be someone expert enough to know what they are evaluating, but not superior to the researcher in case of them prescribing further research. As a result of Foster's academic superiority to the researcher in this study, only a brief comparison was therefore undertaken.

3.3.3.5.3 Prolonged Engagement

Lincoln and Guba suggest that "Prolonged engagement is a must if adequate trust and rapport are to emerge." (1985, p. 303) Prolonged engagement requires the researcher to have a good knowledge of the situation and context to be studied. Patton says fieldwork requires researcher to have *"… direct and personal contact with people under study in their own environments – getting close to the people and situations being studied to personally understand the realities and minutiae of daily life."* (2002, p. 48) He further states that *"Qualitative inquiry means going into the*

field – into the real world… - and getting close enough to the people and circumstances there to capture what is happening." (2002, p. 48) Arguably for this study, the researcher has had a prolonged engagement with both as an established member of the community to be studied, albeit that most of the respondents were other previously unknown community members.

One danger associated with prolonged engagement is that of "going native" – that is, being no longer able to distinguish oneself form the community under study. Lincoln and Guba (1985) discuss various cases where this has happened, but also suggest that validity rests on human judgement. They quote Stewart Emery (1978, p. 39) who says

> "Our individual personal reality – the way we think life is and the part we are to play in it – *is self-created. We put together our own personal reality.* It is made up of our interpretations of our perceptions of the way things are and what has happened to us." [Emphasis added by Lincoln and Guba.] (1985, p. 73)

Lincoln and Guba (1985) also comment on Ford's repetition, wherein the same questions are asked of all respondents. While this ensures repeatability, and would be transferable to a new set of respondents, it is often impossible to execute in a naturalistic inquiry, due to the emerging nature of such an investigation. Within the present study, participants ages ranged from sixteen to over sixty and it would have been inappropriate to ask identical questions of all participants. Questions asked were also dependent upon the prior questions and discussion during the interview, based upon the preliminary or preceding questions.

3.4 Time Horizon

The active research for this study was carried out between 2006 and 2012, which included a two year maternity break. Interviews for data collection were conducted between July 2010 and March 2012. This enabled a cross-sectional snapshot of the current information seeking behaviours of the research participants to be collected and detailed. The data was analysed on an ongoing basis and the research report then completed.

3.5 Techniques and Procedures

3.5.1 Data collection

Goetz and LeCompte describe the technique of constant comparison, saying

> "… this strategy combines inductive category coding with a simultaneous comparison of all social incidents observed. As social phenomena are recorded and classified, they also are compared across categories. Thus, the discovery of

> relationships, that is, hypothesis generation, begins with the analysis of initial observations, undergoes continuous refinements throughout the data collection and analysis process, and continuously feeds back into the process of category coding. As events are constantly compared with the previous events, new typological dimensions, as well as new relationships, may be discovered." (Goetz and LeCompte (1981, p. 58)

Glaser and Strauss themselves when comparing the constant comparison method to analytic induction, describe the constant comparative method as being

> "… concerned with generating and plausibly suggesting (but not provisionally testing) many categories, properties, and hypotheses about general problems. […] Some of these properties may be causes, as in analytic induction, but unlike analytic induction others are conditions, consequences, dimensions, types, processes, etc. In both approaches, those properties should result in an integrated theory." (1967, p. 104)

Winter (2000) discusses the fact that interpretation is usually an intrinsic, possibly unavoidable part of data collection in qualitative paradigms.

Other methods of data collection were considered and rejected for the reasons stated below:

- Questionnaires were considered to be too prescriptive and not enabling the participants to express their information seeking behaviour and network data easily enough. A basic questionnaire as an interview aide and as a way of getting basic demographic information was used, however.
- Research diaries were considered to be too time consuming for participants and that these would inevitably be incomplete and unable to be fully utilised.
- Critical Incident Technique was considered too prescriptive in view of the narrow field of investigation.

3.5.2 Recording the interviews

Whilst interviewing, a digital voice recording device was used as a back-up to interview notes. Due to the nature of post-graduate research, it was not possible to have a note–taker at interviews, and this meant that the researcher needed to be able to concentrate on the interviewee rather than the note taking. A voice recorder enabled far less notes to be taken and still have an accurate representation of the interviews. Additional interview notes were written up immediately after each interview to complement those taken during the interview and the audio recording. Two of the interview participants were uncomfortable with the use of the voice recorder – one asked if the recorder could not be used, to which the researcher

agreed, but the researcher then had to tell this participant that they would have to return on another occasion to do the interview as there was not enough time to conduct the interview on that day. This was partly because the person's spouse had already been interviewed and partly due to the location and travel times required before another appointment. The interviewee agreed to try with the recorder, and became comfortable almost immediately. The second participant who was uncomfortable with the recorder insisted they were fine, but as soon as the recorder was in operation, became mono-syllabic, despite several attempts at putting them at ease, with the researcher ultimately offering to turn off the recorder, which the participant refused. The only explanation was that that participant was afraid of sounding silly on the recording. That particular interview was still useful, although the responses were not particularly in depth. This behaviour serves to remind researchers that not everyone is comfortable with even low levels of recording technology, as suggested by Lincoln and Guba who voiced concerns over batteries failing or audio tapes running out. They also suggest that notes are *"… not as threatening to a respondent as is a recording."* (1985, p. 240) Several interviewees were quite happy for the recorder to be used, as long as they did not have to hear themselves on playback. These people were assured that they would not have to listen to the playback and were then more than happy to be recorded. By 2007, however, when Steinar Kvale published his book "Doing Interviews" it is implicit that interviews should be recorded, where possible, as the transcription of interviews from recordings is frequently discussed. This may also be due to the advances in technology since 1985, as recording devices are now mainly digital, which removes the tape running out concerns of Lincoln and Guba. These concerns were also considered by Given in her 2004 paper which is devoted to the advantages of a certain type of recording device as opposed to others.

3.5.3 Population and Sampling

Lincoln and Guba define population as a term identifying *"… a group of persons, agencies, places, or other units of interest that can by definition be placed together."* (1985, p. 200) The population of persons for this study was comprised of residents of the Ceredigion area, ensuring that the sample covered several age ranges: "16 - 20", "21 – 40", "41 – 55", "55 and over". Students in university accommodation were excluded from the target population, as this group are not permanently resident in

the area. Students who were full time residents of this area at the time the research interviews were conducted were considered for inclusion in the study. Persons aged below sixteen and over the age of eighty were also excluded from participation as they could be considered vulnerable.

This area and population were chosen for the study as there were recent changes in the way household waste and recycling were collected – some of the changes had been implemented and some were still being facilitated at the time of the study. This enabled the researcher to gather information on how these people obtained and then used information which was solely for every day purposes. This type of group's information behaviour had not been studied specifically at the time, so was considered to be rich in potential new material for study.

Ceredigion is a rural area which also includes several large towns, which enabled the researcher to compare rural and more urban environments. Ceredigion is a place with many localised differences – the main towns are densely populated in comparison to the rural areas. The overall population density is 0.4 persons per hectare. In the countryside, the people mainly live in small village communities, which are usually close-knit and have a stronger sense of community than is apparent in the towns. Many of the country communities also have a strong Welsh culture, with Welsh being the primary language in many of the 31,562 households within Ceredigion. The 2011 national population census states that Ceredigion's population is 75,922 people, of which 73,847 are aged over three years of age. Welsh speakers are measured from age three up – the proportion of Welsh speakers therefore is 34,964, (47%) as opposed to those with no Welsh of 38,883, (53%). Ceredigion is defined by the local council as a rural area:

> Ceredigion is a predominantly rural area with Aberystwyth a centre of regional and national importance. A high proportion of employment is found in the agricultural, retail, health and education sectors with limited other employment opportunities. Many opportunities are in small and micro-businesses and there is a widespread issue with low wage levels. ... The population of Ceredigion is relatively well-qualified, although this may in large be attributed to the presence of Higher Education students as well as academic staff. (Ceredigion for All Annual Report 2013-14, p.30)

> The area of the County is approximately 179,500ha with a panoramic coastline of 97km that is strategically located between Pembrokeshire's and Snowdonia National Parks. This makes it one of the largest counties in Wales, but with a low population. […] The 2011 Census recorded a total population of 75,900, largely concentrated in towns and settlements near the coast. Although, Aberystwyth has a population of around 18,000, […] 62% of the population live in villages and smaller […] scattered rural settlements. The whole County is defined as a rural area. (Cyngor Sir Ceredigion, Strategic Equality Plan Annual Report, p.15)

Aberystwyth and its surrounding area is thus a unique geographic environment due to these factors. Aberystwyth itself has many comparable features with any similar sized university town, being cosmopolitan in nature due in large part to the influx of students from a wide range of different backgrounds, cultures and countries.

Population statistics for Ceredigion from the 2011 census (Sourced from the Office for National Statistics) and those from the research participants are shown below in Figures 3.3 and 3.4. They demonstrate the different numbers of people in each age bracket. The figures for those aged below fifteen years and aged over eighty are not shown as this research study did not interview anyone from those age groups, as previously stated.

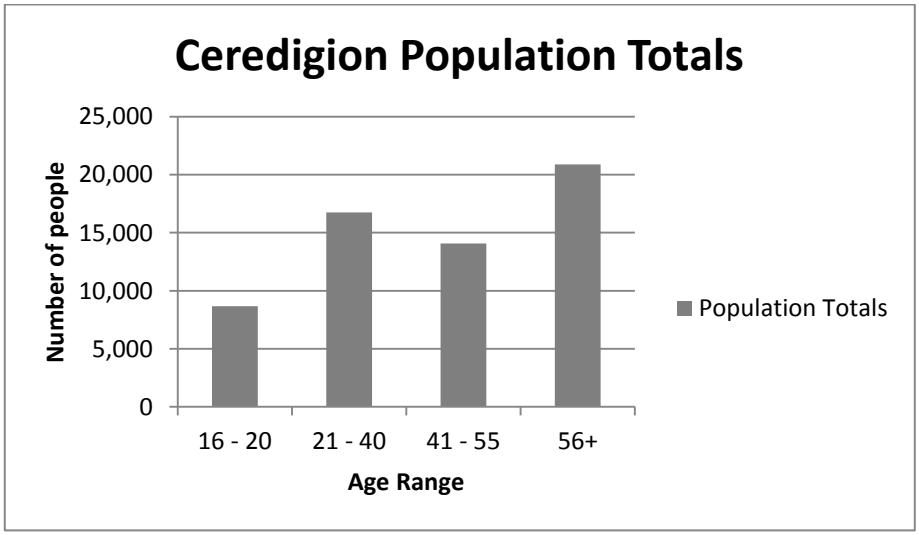


Figure 3.3: Ceredigion Population Totals

[Sources: Office for National Statistics, 2011 census. (http://www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50&sortBy=none&sortDirection=none&newquery=population+statistics+ceredigion&content-type=Reference+table&content-type=Dataset) and Ceredigion County Council-2011 Census population of Ceredigion.htm (http://www.ceredigion.gov.uk/index.cfm?articleid=18407)]

These figures were aggregated from a combination of the figures from the Office for National Statistics 2011 Census results and the Ceredigion county council website figures. Ceredigion's website had rounded the figures to the nearest 100, which did not give enough detail to analyse whether the figures from this study were properly representative of the overall population. The researcher then used the original unrounded figures and Microsoft Excel spread sheets to gather a full set of figures, as presented here in Figures 3.3 and 3.4.

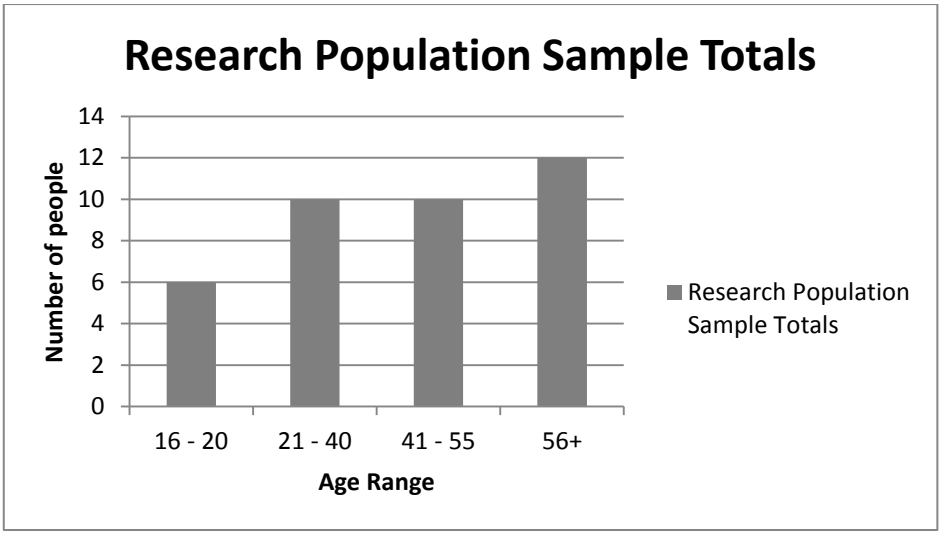


Figure 3.4: Research Sample Population totals

[Sources: Office for National Statistics, 2011 census. (http://www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50&sortBy=none&sortDirection=none&newquery=population+statistics+ceredigion&content-type=Reference+table&content-type=Dataset) and Ceredigion County Council-2011 Census population of Ceredigion.htm (http://www.ceredigion.gov.uk/index.cfm?articleid=18407)]

The sample for interviewing was drawn from local community groups already known to the researcher and some self-selection by contacting university staff either in person or via email to request the involvement of additional participants. These two recruitment methods enabled purposive building of a representational sample of age ranges and socio-economic groups.

Purposive or purposeful sampling is a method whereby some of the sample population may be selected for the benefit of the study and the information likely to be yielded from an individual, based on certain criteria.

3.5.3.1 Sampling Criteria

In this study, those criteria were to ensure that a wide range of individual respondents were represented, who, in turn roughly represented the local area population and provided the researcher with a broad variety of views and opinions. The criteria were based on the following requirements:

- Age: to ensure that all age ranges were represented, based on the approximate local population figures
- Residency criteria: only people who lived in the locality full time were considered as respondents due to the nature of the enquiry topic. It was felt that students and others who were not full time residents of the area would not have a full grasp or ownership of the issues involved.

- Family ties and local networks: this criteria was used to enable the snowball technique to be used, whereby a participant could suggest another person with whom they had a link to the researcher as a potential useful interviewee – either because they were someone to whom the respondent had close ties or because the participant felt the person would be a good information source on the topics under investigation. This referring of another potential participant is known as snowball or chain sampling.

Lincoln and Guba state that "*Naturalistic sampling is … based on informational, not statistical, considerations."* (1985, p. 201) and that this

> "… is best achieved by selecting each unit of the sample only after the previous unit has been tapped and analysed. Each successive unit can be chosen to extend information already obtained, to obtain other information that contrasts with it, or to fill in gaps in the information obtained so far.[…] Such successive units are most easily obtained by nominations (reputation, personal)," (1985, p. 201)

Patton describes "snowball or chain sampling" as an effort to identify information rich cases to interview. He also states that the reason for *"… purposeful sampling is to select information-rich cases whose study will illuminate the questions under study."* (2002, p. 237 & p. 46)

Lincoln and Guba also point out that this method is effective in obtaining all of a group's available members, in that a

> "… "qualitative isomorph" as is achieved, for example, by snowball sampling. In this form of sampling one identifies, in whatever way one can, a few members of the phenomenal group one wishes to study. These members are used to identify others, and they in turn others. Unless the group is very large one soon comes to the point at which efforts to net additional members cannot be justified in terms of the additional outlay of energy and resources; this point may be thought of as a point of redundancy." (1985, p. 233)

Purposeful sampling enabled the researcher to ensure that the participant sample was reasonably representative of the area's general population in terms of age range and gender. Because the research was focused on the Ceredigion area, it was important that the research participants were resident and generally representative of the local population.

Lincoln and Guba when describing one of the fourteen characteristics of their suggested naturalistic paradigm axioms suggest that one of the benefits of using purposive sampling is: "… *because purposive sampling can be pursued in ways that will maximise the investigator's ability to devise grounded theory that takes adequate account of local conditions, local mutual shapings, and local values (for transferability)."* (1985, p. 40) Patton contends that *"The logic and power of*

purposeful sampling lie in selecting information-rich cases for study in depth… Studying information-rich cases yields insights and in-depth understanding rather than empirical generalizations." (2002, p. 230) Patton further describes *"purposeful random sampling"* as being able to be used to affirm credibility, especially where other *"cases"* selected are on an ad hoc basis or via personal selection. (2002, p. 240)

Thus the self-selection of volunteers from within the University community was partly due to the economic conditions of the local area. It became apparent after interviewing about fifteen people that the average household income in the Ceredigion area was between £20,000 and £40,000. At this point in the research process, there had not been a single household where the income was above this level, even in instances where more than one adult was working full time in the household. Ultimately, six people were interviewed from the higher income bracket.

The research was focused on household and family networks, so the only "vulnerable group" to be interviewed was 16 – 17 year olds. Persons interviewed within this age group gave their own written consent in addition to a consent signed by one of their parents. Interviews with 16 - 17 year olds were conducted with a third party present, in a suitable public space although topics covered were limited to information seeking behaviour regarding environmental issues and were thus not considered to be sensitive.

3.5.3.2 Recruitment

Interviewees were invited to take part via several methods. Some were members of local community groups and were known to the researcher. These people were approached directly in person and given information about the research and asked if they would be prepared to participate in the research

A second layer of potential interviewees was identified from these first interviewees, and were also approached directly. Since the research was investigating the influence of family and social networks on information seeking behaviour, it was expected that spouses, children of the appropriate age and the senior generations of the original participants' families or households would be invited to take part in the research, providing they met the criteria for inclusion as detailed in Section 3.5.3.1 above. Approximately half of the interviewees were either close family members of an original contact or a member of their information

network, either socially or via their workplace. Due to the locality in which this study was carried out, many of the participants have strong family and social ties. Many participants know a large number of the local residents and have often lived in the area for most if not all of their lives. Participants in the study ranged from having only lived in the area for a year, to having been born in the area and raised their children and now seeing their grandchildren being raised in Ceredigion. Section 3.8.4 discusses this further.

A third layer of interviewees were from social encounters – people with whom the researcher had a connection via various community groups and who expressed an interest in participating in the research being carried out. This sector of interviewees was included due to the earlier issues with recruiting people via the snowballing method described in Section 3.6.

A sampling and recruitment method which was considered in the preliminary stages of the research was the “Random walk” method of gaining a random sample of participant households. (See Marcella and Baxter, 2001 for full details.) This would have involved deciding upon a start point and then randomly knocking on doors to invite household members to take part in the research. While this is a valuable method for gaining a random sample it is safer to use this method when a team of researchers is carrying out the initial contact, rather than a lone researcher, so this method was discarded on researcher safety grounds.

3.5.3.3 Composition of sample and relationship to informed consent.

Due either to their age or to any health issue that rendered them vulnerable to being interviewed, not all members of a household participated in the research. If any household member had agreed to participate, but had then withdrawn at a later stage of the research, their data would have been removed from the study. This would not have removed the entire household - just that individual. Indirect data relating to any withdrawn participants would have been included anonymously in the same way as the data of other non-participants. No individuals actually withdrew from participation in the research, so this provision was not used, but it was an essential part of the informed consent process.

Interviews were conducted in public places, where confidentiality could be achieved without compromising the safety of either the researcher or any interviewees. Telephone or internet chat interviews were also offered for any

participants who preferred not to be interviewed in a public space, but this route was not necessary as all participants were interviewed in places which complied with these safety considerations. It should be noted that one potential interviewee was interested in an internet based interview, but then decided not to participate, due to the volume of school and examination coursework at that time.

Consent was obtained in writing from all participants. In the case of participants under the age of eighteen, written parental consent was also obtained. All participants were given an information sheet and a consent form to read and complete either before or at initial consultation stage. These were drafted according to the guidance given on the NRES website and are included as appendices. Participants were informed that they could withdraw at any stage of the research.

Participants were offered the option of access to their interview transcripts for review at an early stage and to an electronic copy of the completed thesis once the research is finished and fully examined.

3.5.3.4 Sample Size

In the period from July 2010 to March 2012 a total of 41 people from the Ceredigion area were invited to take part in the research. 38 of those initially invited to participate were interviewed, giving a 92.6% response rate.

People invited to participate	Completed interviews	Response rate
41	38	92.6%

Table 3.2: Sample and Response Rates

Of these 38 people, 17 were primary participants i.e. directly invited to be interviewed. The remaining 21 were secondary participants, being those people suggested by primary participants as potential interviewees. Secondary participants were thus family members or contacts of the primary participants. It should be noted that several of these secondary participants were subsequently revealed to have relationships with more than one primary participant. In one case, the partner of one primary participant suggested a work colleague as a suitable potential secondary participant interviewee. In turn, this new secondary participant was mentioned as a friend of a later primary participant during that interview. This inter-relationship of people is discussed in more detail in Section 3.5.3.6 below. Tables 3.2 and 3.3 show the breakdown of this information.

Primary Participants	Relationship type	Secondary Participants
17	Partner	6
	Child	6
	Parent	8
	Friend	5
	Colleague or former colleague	11
	Employee or former employee	2
	None	2

Table 3.3: Numbers of Primary and Secondary Participants and the relationship types.

The people interviewed covered both genders as well as the full range of socio-economic categories and ages from sixteen up to the mid-seventies, as detailed previously in Section 3.8.3. Full details on the demographic information gathered are shown in Section 3.8.5 below. Figures 3.3 and 3.4 above show that the age range of the participant population is broadly representative of the general Ceredigion population. There were slightly more people interviewed within the 21 - 40 age range than the equivalent number within Ceredigion's general population. This was due to the sampling methods used and the secondary participants generated.

The thirty-eight participants interviewed satisfied these criteria and ensured that data saturation was achieved. This meant that after interviewing this number of people, no new answers were achieved to the questions from the interview guide, only duplicate answers to those already received. Lincoln and Guba describe this as *"selection to the point of redundancy, that is, when no new information is forthcoming and information obtained from new respondents replicates that already obtained from previous respondents."* (1985, p. 202) Lincoln and Guba further state that a "*qualitative* informational *isomorph*" is reached when

> "… a sample that is expanded until redundancy with respect to information is reached, at which point sampling is terminated. That sample may be large or small, but it is sufficient when the amount of new information provided per unit of added resource expenditure has reached the point of diminishing returns (that is, it would not be profitable to add even one more sample element)." (1985, p. 233-4)

Although this study has a relatively small number of participants, as Patton states *"while one cannot generalise from single cases or very small samples, one can learn from them – and learn a great deal, often opening up new territory for new research."* (2002, p. 46.) Patton goes on to say that "*Cases for study … are selected because they are "information rich" and illuminative, that is, they offer useful manifestations of the phenomenon of interest; sampling, then, is aimed at insight about the*

phenomenon, not empirical generalization from a sample to a population." (2002, p46.) Lincoln and Guba suggest that *"… naturalistic inquiry relies upon purposeful rather than representative sampling … and emergent design."* (1985, p. 102) and that *"... sampling is not representative but contingent and serial."* (1985, p. 224)

The thirty-eight participants generated thirty-five interview transcripts as six participants were interviewed in pairs. The interview transcripts yielded 347 pages of data, with a total transcribed word count of 172,085 words.

Supplementary interviews were not conducted, due to the data being sufficient from the primary round of interviews.

3.5.3.5 Sampling Criteria and Bias Reduction Strategies

As it was not possible to measure the responses of an entire population within this study, a representative sample was therefore used instead. The results from the sample may then be used to provide information about the general population.

There are two main categories of sampling: probability and non-probability sampling. Probability sampling is that in which every unit in the population has a chance of being selected in a sample, and that probability of selection can be accurately determined. Conversely, non-probability sampling techniques are those where either some of the population have no chance of being selected in the sample or the probability of selection can't be determined. The initial planning of the Random Walk survey would have provided a probabilistic method of sampling, but as mentioned in Section 3.5.3.2, this was unable to be achieved due to researcher safety issues. This meant that non-probability methods needed to be used.

The non-probability methods used meant that samples are taken that are representative of the population with respect to specific criteria (but they might not be representative regarding any other variables). The sampling criteria should be carefully chosen so as to reduce the bias within the sample population. To identify whether a sample is representative of the population with respect to a particular variable the distribution of that variable within the population must be known. If nothing is known about that variable within the overall population then it cannot be said whether a sample is representative of the population with regards to that variable. Population census data about Ceredigion is collected and made available and includes such variables as age, gender, ethnicity, as well as many others.

Within this study, sampling criteria were set for two purposes. The first was to ensure people were interviewed who would be able to provide the rich data needed to meet the research objectives and secondly to reduce potential bias within the sample. In this study age and gender were assessed as the most important variables to control for because the study was specifically looking at the different generations and their information behaviours. While the primary variable within this study was age, gender was also chosen as the statistics were available to ensure a representative sample was measurable against the overall population figures available as detailed in Section 3.5.3. Other variables could have been chosen as well but some would clearly not be suitable. For example, based on the 2011 census data the population of Ceredigion is 96.7% White with regards ethnic group so there is clearly little racial variation and this was not considered as a criterion.

As discussed above the sampling criteria were set, (as detailed in Section 3.5.3.1 above) to ensure that a broadly similar gender and age range to the general population was achieved. This research makes no generalisability claims, as the sample population was not selected probabilistically and would have been too small to be statistically robust enough for this purpose in any case. More details about the gender and age ranges of the sample population as compared to the general population are in Section 3.5.3.

3.5.3.6 Demographic Questionnaires

The questionnaires contained demographic information, including age, gender, and current socio-economic status. This data was gathered to analyse the sample make-up and establish whether the sample was therefore representative of the generalised local population. As the interviewing progressed, it was therefore possible to be more purposeful in selecting participants to ensure full saturation of the age groups was achieved. A copy of the questionnaire is included as Appendix Five. The demographic data was analysed using Microsoft Excel software. The results of the demographic analysis are shown in Tables 3.4 - 3.7 and Figure 3.5 below and discussed below.

Gender of interview participants	
Male	Female
17	21

Table 3.4: Demographic information from Questionnaire: Gender

As can be seen from Table 3.4, the gender split of the interviewees was not equal, with seventeen male respondents and 21 females. This equates to 45 per cent male and 55 per cent female participants.

Figure 3.5 below shows the detailed breakdown of gender within each age range and demonstrates that for three of the age groups interviewed, 16 – 20, 41 – 55 and over 56, the gender split was equal, with the remaining age group of 21 – 40 being more heavily biased towards the female respondents. The main reason for this was that the interviews were mostly conducted during the working week of Monday to Friday, and there were fewer male respondents available within that particular age group and that timescale. As the overall gender balance of the research participants still allowed for a roughly even gender split of seventeen males to twenty-one female participants, this was not considered to affect the validity of the research.

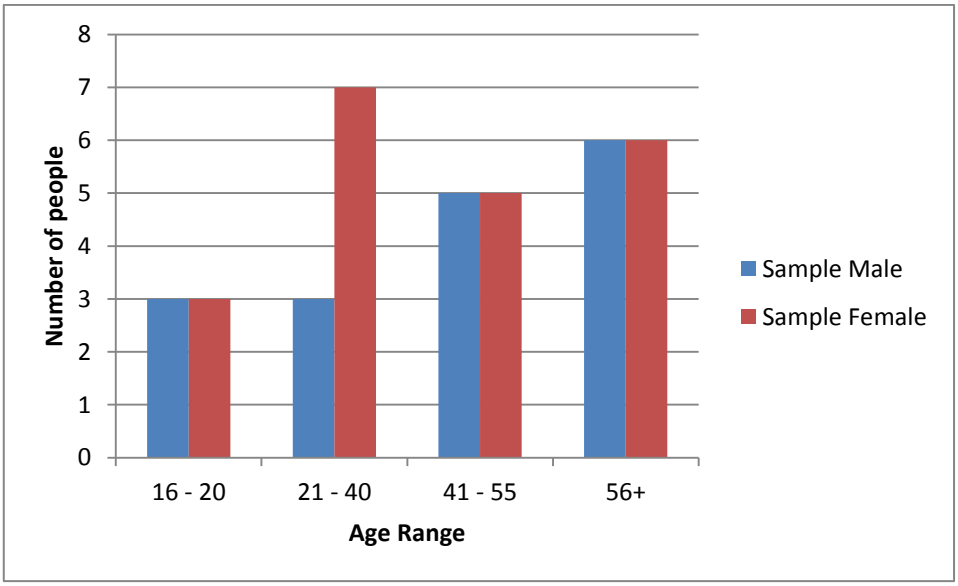


Figure 3.5: Gender breakdown according to age of study participants

Age range of interview participants				
16 - 17	18 - 20	21 - 40	41 - 55	56+
3	3	10	10	12

Table 3.5: Demographic information from Questionnaire: Age Range

An approximate mean participant age of 44.77 years (rounded to 45 years) has been calculated, as the participants were not asked for their exact age, but just to indicate within which range they were at the interview date. This calculation was done by taking the number of interviewees in each age range and multiplying this number by the middle of the age range. This was repeated across all four groups

and then, the sum of all the group ages was divided by the total number of actual respondents. Fewer under 21's were interviewed than the number in the remaining age ranges as the members of this age group were, like the males in the 21- 40 age range, not always available when the researcher was available. The Ceredigion population statistics show that there are fewer under 21's than in the other age ranges interviewed, so this smaller number was still consistent with being representative of the general population. It was also felt that it was more important to interview people who were interested in the subject matter of the research than to concentrate on exact numbers within the participant age range ratios.

Because of the requirement of interviewing the under 18 year olds in the presence of a responsible adult and the fact that the members of this age group were also mostly interviewed in pairs, there were additional logistical constraints in arranging these interviews.

The generations were defined according to age – participants over the age of 50 are Generation 1, those aged 25 – 49 are Generation 2 and the participants aged 24 and under are Generation 3.

Employment status of interview participants			
Education	Working	Unwaged	Retired
7	20	4	7

Table 3.6: Demographic information from Questionnaire: Employment Status

The data in Table 3.6 shows the breakdown of the employment status of the respondents when interviewed. 52.63 per cent of the sample population were in paid employment of some kind, while 18.42 per cent were in education and another 18.42 per cent retired. The remaining 10.53 per cent were unwaged at the time of their interviews.

Economic status of interview participants' households		
< 20k PA	20 – 40k PA	> 40k PA
13	19	6

Table 3.7: Demographic information from Questionnaire: Economic Status

The average wage of the area, as previously stated, is lower than the national average wage and purposeful sampling was used to target some higher earners within the locality.

The Microsoft Excel spread sheet was also used as a primary tool for recording the relationships between the interviewees, prior to entering this data into the Social Network Analysis software, QSR NVivo 10. As stated in Section 3.7, the amount of Social Network Analysis (SNA) carried out was significantly less than originally

anticipated. QSR NVivo 10 software was suitable for mapping network connections to provide the researcher with an overview of how the participants knew one another. The purpose of the SNA within this study had originally been to consider the patterns of influence within the information seeking. It had become apparent that while there were plenty of connections between the participants, this appeared to have no direct influence relevance. Aberystwyth and its environs are a fairly small community and many residents have a connection via someone that knows them or of them. This is discussed further in Chapter Six.

3.5.4 Interviews

Savolainen (2005) suggests that semi-structured interviews are the best way to get *"… nuanced and context-sensitive empirical data."* (p.147) Semi-structured interviews were therefore conducted based on an interview guide and best practice for critical incident technique. Whilst Patton states that *"… a critical incident can be a purposeful sample"* (2002, p. 47) critical incident technique was only used as one part of the interviewing palette. Critical incidents alone were not considered to yield sufficient qualitative data due to the limitations of the scope of environmental information seeking. Lincoln and Guba said that *"An interview, as Dexter (1970) has suggested, is a conversation with a purpose."* (1985, p. 268) They also suggest that the *"… investigator and respondent together* create *the data of the research."* [Original emphasis.] (1985, p. 100) This is in part due to Lincoln and Guba's first research axiom (discussed in Section 3.3.2) which suggests that the researcher and the interviewee are influenced by the process, as well as by one another, or as Lincoln and Guba put it, *"The inquirer and the "object" of inquiry interact to influence one another; knower and known are inseparable."* (1985, p. 94) It should be noted that the researcher is required to maintain a neutral stance. Patton suggests that *"empathic neutrality" offers "… middle ground between becoming too involved, which can cloud judgement, and remaining too distant, which can reduce understanding."* (2002, p. 50) Patton continues with the caveat that *"… neutrality does not mean detachment… Qualitative inquiry depends on, uses, and enhances the researcher's direct experiences in the world and insights about those experiences."* (2002, p. 51) In reality, neutrality is a balance between interpretivism and constructivism. During interviews the researcher is required to gain and maintain rapport with the interview participants – this can place a strain on the interviewer's neutral stance – making it

imperative for the researcher to remain objective to and aware of the interview's purpose at all times.

Conversations with a purpose also have to be "steered" by the interviewer and this steering will have an effect upon the data obtained from the interview. There are several different roles which an interviewer may take and within this study, a blend of interviewer-respondent relationships was followed, using *"… the* rapport *interview (the interviewer is "a human-being-in-a-role"); … the* depth *interview (interviewer and respondent are "peers");"* (Lincoln and Guba, 1985, p. 269) [original emphasis]

Interviews were conducted for this research as they were considered to be the optimum method for exploring phenomenon with human participants. Rich data was collected, giving robust results for data analysis, which is discussed in a later section of this report. Interview results were maximised by following up suggestions from primary interview participants on potential secondary interview participants.

Lincoln and Guba (1985, p.94) go on to discuss how research participants react to being surveyed by not acting how they normally would. They can give erroneous or non-standard behaviour responses and this can skew data collection. Lincoln and Guba go on to mention the Hawthorne effect, whereby participants may give the answers they perceive to be what the interviewer may want to hear, rather than what they actually feel is correct. A clue to this type of behaviour is non-verbal communication, which according to Lincoln and Guba *"…is sometimes defined as the exchange of information through nonlinguistic signs: gestures, which are more or less conscious, and body language, more or less unconscious."* (1985, p. 276) These gestures may be used to invalidate what a respondent is saying, or emphasise a point.

The interview schedule is discussed in Section 3.6.1. The interviews were audio-recorded and subsequently fully transcribed for analysis. These procedures were undertaken to enable full details of the interviews to be taken. This also safeguarded both the researcher and the participants from both a personal integrity and a safety perspective.

3.6 Developing the survey instruments

At the preliminary stage of the research, it was decided that in order to answer the research question, semi-structured interviews would be necessary. Once this course of action was decided upon, it became necessary to design an interview schedule

and a questionnaire to ensure that the data was obtained as efficiently as possible, reflecting the research aims. Copies of the interview schedule and the questionnaire are at Appendix Three and Appendix Five, respectively.

The questions were formulated based upon the research aim which was to explore the Nonlinear Evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group, whilst keeping in mind that as Lincoln and Guba suggest,

> "When working within the naturalistic paradigm, however, the investigator typically does *not* work with either a priori theory or variables; these are expected to emerge from the inquiry. Data accumulated in the field thus must be analysed *inductively* (that is, from specific, raw units of information to subsuming categories of information) in order to define local working hypotheses or questions that can be followed up." (1985, p. 203)

Lincoln and Guba go on to say that *"Review, recycling and change must be central postures."* (1985, p. 249)

The questionnaire and interview schedule were tested on a pilot set of interviewees and were reviewed by the researcher and the primary supervisor to assess their suitability for purpose. It was decided that the questionnaire worked well split into two parts and that most people would only need to complete the demographic section of the questionnaire, as the answers to the written questions were revealed within the interviewing process. The exception to this was where the participants were less forthcoming in their responses and the second part of the questionnaire was deployed as needed in these interviews as an additional prompt to their thinking processes.

The main set of interviews was thus conducted using the interview schedule as a guide and the questionnaire was only used for gathering the demographic information in most cases.

This study was focussed on information seeking and the environment, so the interview questions asked were about this topic. The preliminary interview questions were designed to help put participants at ease. Asking if they recycled and what items they recycled was a good way to achieve this. Everyone interviewed for the study undertook recycling to some extent, as the council had recently introduced a new kerbside recycling collection just prior to the start of the interviewing process.

3.6.1 Environmental Issue Interviews: Interview Schedule

The interview schedule opened with a question inviting participants to explain when and why they had been looking at environment and recycling information. The remaining topics were used as prompts when interviewees had not already covered an issue during their initial answer and were intended to help the interviewer to focus interviewees on their information seeking behaviour and the information sources used within their personal social networks.

A copy of the interview schedule is included as Appendix Three of this thesis.

3.7 Analysing the data

Quantitative analysis was performed on the demographic data of the participants, using Microsoft Excel software, as discussed above in Sections 3.5.3.3 and 3.5.3.4. Quantitative analysis was also used for the social network data to assess relationships and individual's impacts using Microsoft Excel software. Qualitative coding of the interview transcripts was conducted using QSR NVivo10 software. As far back as 1985, Lincoln and Guba (1985, p. 352) were considering computer assisted data processing. They quote Drass (1980, p. 337) whose words about a software program named LISQUAL from nearly thirty years ago are still true now – *"[Computer software]* aids *the interpretive phase of data analysis only to the extent that the interpretive phase relies upon the mechanical phase for the presentation of data."* (1980, p. 337) [emphasis in original] Lincoln and Guba themselves go on to say that *"... the programs do not draw inferences, but simply arrange or display the material in ways that aid the inquirer to make interpretations."* (1985, p. 352) Patton reiterates that *"Qualitative software programs facilitate data storage, coding, retrieval, comparing and linking – but human beings do the analysis."* (2002, p. 442) Davis and Meyer (2009) concur with the points made above in their comparison of manual and computer assisted coding of data. Meanwhile, Firmin *et al.* (2016) state

> "The acceptance and application of qualitative methods has been steadily increasing, and recent advances in computer analytic software programs have produced a rapidly evolving landscape of new methods and analytic tools. However, discussions regarding the use of these new computer-based methods alongside traditional qualitative methods remain sparse." (p.1)

The transcripts were also coded to identify both frequency and relevance of the social network linkages and to delineate both network usage and impact of contacts.

Patton states that *"The challenge of qualitative analysis lies in making sense of massive amounts of data."* (2002, p. 432) In order to achieve meaning from the data collected in this study, coding was undertaken, which is discussed fully in Section 3.8 below.

3.7.1 Data Preparation and Cleaning

Prior to commencing coding, the data was imported to the Qualitative Data Analysis software package QSR NVivo10. This required a re-write of the main interviewees spread-sheet that had been used to this point in the research to record the anonymised interviewees' demographic and relationships data. The new simplified version of the spread-sheet was then imported to enable analysis of the data.

Interview transcripts were imported directly from Microsoft Word software to QSR NVivo10 to be coded.

3.8 Coding

All the data was collected via semi-structured interviews with various household members. Glazier says that *"Researchers strive to capture the essence of a subject by using description that yields generalizations documented by specific examples of data from the field."* (1992, p. 7) While Patton suggests that *"Pure description and quotations are the raw data of qualitative inquiry."* (2002, p. 26) The collected data from the interviews was then analysed using QSR NVivo10 software.

Coding was conducted on an iterative basis. Miles and Huberman (1984, pp. 54 - 80) discuss how coding is carried out at several different levels, ranging from preliminary, descriptive codes, through interpretive codes up to inferential and explanatory codes. The coding will also, according to Miles and Huberman, take place over a period of time, which will encompass the initial stages of data collection right through to the completion of this stage of research. The preliminary set of codes were created and described while coding the first interview transcript. These preliminary codes were then used for the initial coding of the remaining transcripts. Figures 3.6 – 3.8 below show some of the coding of the initial interview. The preliminary coding was identifying broad themes, such as the items which were being recycled, places where recycling occurred or information was sought, and the information sources used. This coding progressed to more complex themes such as attitudes. Figure 3.6 shows some single word coding which was coded to

"information sources" and a few sentences on "attitude to recycling", one of which is also coded to "green or sustainability issues".

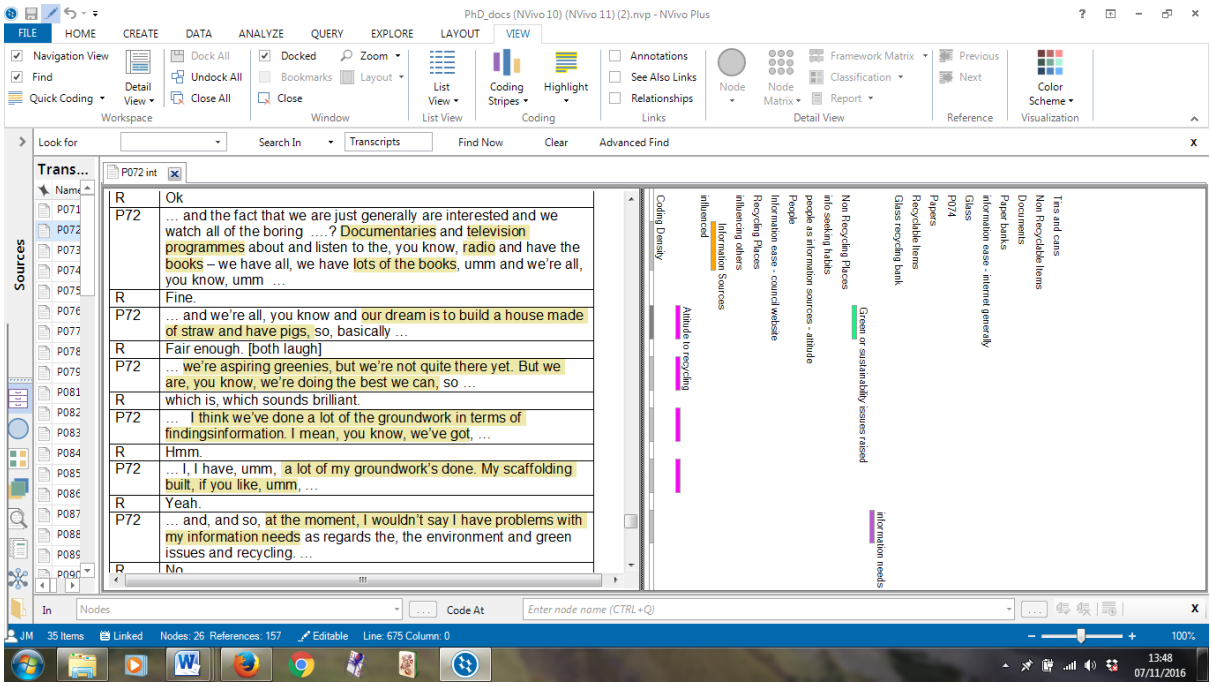


Figure 3.6: Excerpt one of coding Transcript of P72

As coding progressed, passages of the transcripts were coded to more than one code, with new codes being added iteratively over the interviewing and transcribing period. As new codes were added, previously coded transcripts were reviewed to identify any passages that needed to be included in these new codes.

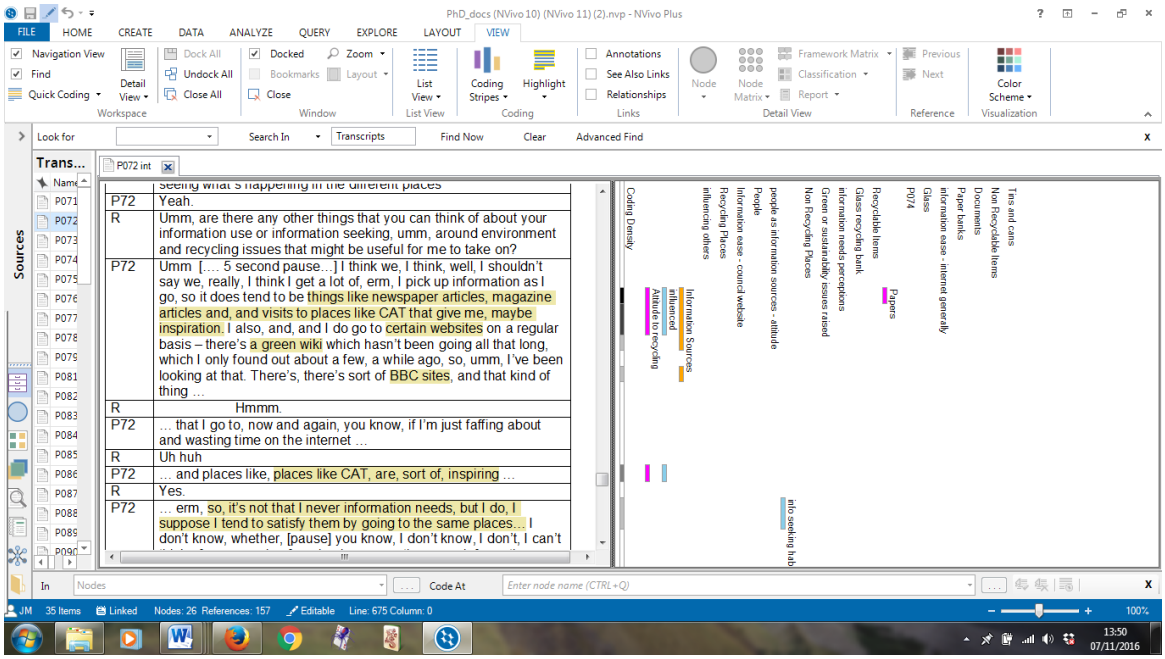


Figure 3.7: Excerpt two of coding Transcript of P72

Figure 3.7 shows one short passage that is coded to four different codes, as different parts of the sentence referenced some basic codes, such as “places” and “information sources”, with other parts of the sentence covering more complex themes which emerged, including “attitude to recycling” and “influenced”.

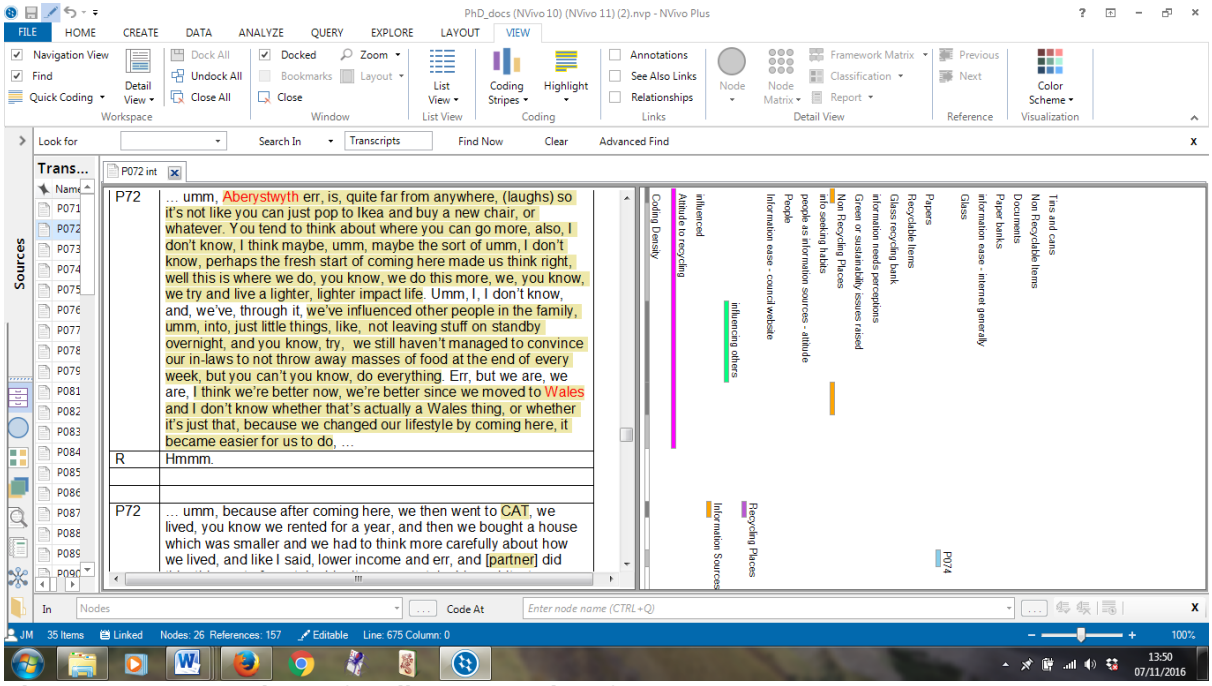


Figure 3.8: Excerpt three of coding Transcript of P72

The preliminary codes are listed in Table 3.8. Some of the collected data was relevant to more than one code, as shown above in Figure 3.8 and some quotes from interviewees have thus been used within this thesis wherever they are appropriate. During this first iteration it became clear that some codes needed to be more specific and some more general, to be sorted into themes after the initial round of coding. Preliminary codes were based on individual words, phrases and then themes which began to emerge. Glaser and Strauss state that *“… the discussions in his [the analyst’s] memos provide the content behind the categories, which become the major themes of the theory later presented”* (1967, p. 113), while Patton describes this method as the “*inductive analysis process*” which he states *“… involves* discovering *patterns, themes, and categories in one’s data. Findings emerge out of the data, through the analyst’s interactions with the data, in contrast to* deductive analysis *where the data are analysed according to an existing framework.”* (2002, pp. 453 – 4) [Original emphasis.]

Later fieldwork is informed by earlier fieldwork and analysis and data collection are fluid, not linear. This is confirmed by Patton who states that *"While earlier stages of fieldwork tend to be generative and emergent, following wherever the data lead, later stages bring closure by moving toward confirmatory data collection – deepening insights into and confirming (or disconfirming) patterns that seem to have appeared."* (2002, p. 436)

From this initial stage of coding a preliminary code book was prepared and then compared to an existing code book to assist with validity checking. This was discussed previously in Section 3.3.3.5 above.

3.8.1 Preliminary Coding Results

The data was sorted into appropriate codes to determine the types of information sources being used and the types of information seeking being undertaken. At this preliminary stage, the coding also encompassed items that were recyclable and places where these items could be taken. This was relevant to the information seeking behaviour under study, but only at the commencement of the analysis.

Table 3.8 below is a list of these initial codes which were drawn from the primary analysis of the interview data. The table shows the variety of information sources used and the information seeking behaviours described, as well as the frequency of the items. The list was sub-divided for ease of use. Relevant top level codes formed the basis of the analysis of the interview results and will be considered in detail in the remainder of this thesis.

Name	Sources	References
Attitude to Recycling	33	273
Lifestyle choices	11	72
Re-use and buying from charity outlets	22	48
Waste and balance between viability, time and actions	18	69
Disposable information and value of information	7	11
Ease of information on recycling	17	44
Ease of recycling	26	78
Difficulty recycling	12	17
Green or sustainability issues raised	29	194
Influenced	21	46
Influencing others	27	61
Information seeking habits	33	160
Information needs	18	42
Passive information seeking or receiving	8	14
Prior knowledge	7	11
Serendipitous information	7	10
Trust of information source	19	44
Information dissemination	10	19
Information ease – council website	5	6
Information ease – internet generally	9	17
Information needs perceptions	3	3
Information seeking habit changes	4	5
Information sources	24	130
Documents	28	80
Email and electronic information	4	6
Media	14	31
People	31	128
Peer networks	17	36
People as information sources - attitude	24	60
Places	13	21
Websites	31	119
Information use	16	38
Non recyclable items	5	12
Non recycling places	6	21
Perception of others' views on recycling or sustainability	13	27
Recyclable items	3	12
Batteries and electricals	12	19
Cartons	5	10
Clothes and textiles	15	23
Furniture or household items	3	7
Garden and food waste	16	22
Glass	28	131
Papers	30	175
Plastics	17	23
Tins and cans	12	17
Recycling places	24	80
Charity shops	16	33
Glass recycling bank	13	27
Paper banks	3	8
The tip / recycling centre / dump	16	33
Re-usable items	7	25

Table 3.8: Preliminary Coding list

The initial top level codes are the ones with no indentation on the list shown in Table 3.8. It should be noted that Table 3.8 has the top level codes in alphabetical order, but in the following sections of this thesis they have been grouped by theme for ease of discussion.

In the table, the term “Sources” reflects the individual transcripts from which the codes were derived. “References” denotes how frequently the code was mentioned.

The coding levels changed slightly during subsequent analysis, as follows:

- Information seeking habit changes became a secondary level code, within Information seeking habits.
- Recycling places and Non-recycling places were combined with “places” in the Information sources code.
- Green or sustainability issues raised and Reusable items and second hand items – perceptions, were made secondary level codes within Attitude to Recycling.
- Information ease – council website and information ease – general internet were made secondary levels within the Ease of information on recycling code.

A detailed code book was created to enable results to be replicated if any further study was undertaken. A copy of the detailed code book created is at Appendix Nine for reference.

Initial findings suggested that people prefer certain information sources above others. This often has more to do with trusting those sources or that they are the easiest information sources to access, than that they are always the most informed or factually correct. These results are presented in Chapter Four.

McKenzie (2003) studied the everyday life information practices in a specific group of Canadian women pregnant with twins who were all at various stages of trying to get information about twin parenthood and multiple pregnancy. McKenzie’s study used initial interviews and follow up telephone calls to enquire about specific incidents of information encountering during the week following the initial interviews. This in turn allowed an in depth look at the information incidents over a “week in the life” of the participants, enabling accounts of unfolding information events to be recorded in real time. Her participants information seeking behaviour was context oriented, dependant on what stage of pregnancy they were at, what resources they had available to them and what information they required at the time.

This context dependency is relevant to this study as the participants had all just changed from one refuse and recycling scheme to a new one. Some of the participants were still in the changeover period of this process and one or two who worked in the Ceredigion area but lived just outside the county were on a different scheme at home to the one they had to comply with at work.

The old system required individual households to take their own recyclable materials to appropriate points, while their non-recyclable refuse was collected from the doorstep. The council needed to increase its recyclable waste, so introduced a "clear bag" recycling system across the county, rolling it out over a period of time. Under the new system, all recyclable material except glass and textiles could be placed in the clear bag and collected weekly from the doorstep, whilst refuse was now only to be collected fortnightly. Glass and textiles still had to be taken to a recycling point or sent to landfill with the household waste. A separate weekly compostable food waste collection was introduced simultaneously to prevent "smelly" rubbish from having to be kept in homes for too long.

During the interviews, it is noteworthy that several participants discussed the recycling schemes of family members and friends who lived in other areas, comparing these schemes with that of Ceredigion.

As discussed previously, the generations were defined according to age – participants over the age of 55 are generation 1, those aged 25 – 54 are generation 2 and the participants aged under the age of 24 are generation 3. The participants were split into these generations due to the expectation at the start of the study that the different age groups, or generations, would have different information seeking behaviours. However, as mentioned above, the participants in this study did not show any difference in information seeking behaviour due to their age. This will be considered further in Chapter Five.

3.8.2 Detailed Coding Results

The excerpt below of part of Table 3.8 shows the initial breakdown of information sources from the preliminary codes list on information sources.

These top level codes were further separated into types and investigated to identify trends in information seeking behaviour. Glaser and Strauss describe this as *"… an inductive method of theory development. To make theoretical sense of so much diversity in his data, the analyst is forced to develop ideas on a level generally higher*

in conceptual abstraction that [*sic*] *the qualitative material being analysed"*. (1967, p. 114) Patton when talking about "Evaluative research" says it *"… can include any effort to judge or enhance human effectiveness, and/or inform decisions about future programming."* (2002, p. 10) Patton continues this theme, saying *"Evaluation case studies have all the elements of a good story. They tell what happened, when, to whom, and with what consequences. … The purpose of such studies is to gather information and generate findings that are useful."* (2002, p. 10)

Name	Sources	References
Information sources	24	130
Documents	28	80
Email and electronic information	4	6
Media	14	31
People	31	128
Peer networks	17	36
People as information sources - attitude	24	60
Places	13	21
Websites	31	119

Table 3.9: Excerpt from Table 3.8

Once the coding was completed, the themes were identified and analysed further and these results are described in the subsequent themed chapters.

3.9 Ethical considerations

Because the interviews were to cover several generations of people, with the expected ages ranging from 16 – 79, there were several ethical issues to consider. One of these considerations was the fact that 16 – 17 year olds are considered a "vulnerable group" and as such, consent from the parents or carers of these interview participants was obtained in addition to the individual's own standard consent forms. Another ethical issue pertaining to this age group was the interview locations. As detailed in Section 3.8.3, additional safeguards were put in place for the interviews with the 16 – 17 year olds, to ensure the personal integrity of both the researcher and participants was protected, as well as ensuring that the ethical standards of the University were met.

Particularly in the interviews with 16 – 17 year olds, although considered with all the interview participants, was the ethical issue of leading the participants in their answers. The interview schedule and the questionnaire were used to enable the researcher to standardise the questions in so far as was possible within the bounds of semi-structured interview techniques. The researcher also endeavoured at all times during the interviewing process not to mention certain well known search

engines, websites or other non-web-based information sources until the participant had named them.

The researcher was also aware of the ethical principle of “least harm”, which is to endeavour to do the least possible harm to those being researched. The American Anthropological Association suggests that researchers *“… share a primary ethical obligation to avoid doing harm to the lives, communities or environments they study or that may be impacted by their work.”* Their definition goes on to state that *“This includes not only the avoidance of direct and immediate harm but implies an obligation to weigh carefully the future consequences and impacts of an anthropologist’s work on others.”* They further suggest that in some cases the principle may preclude continuing the research, although they continue to say that *“Avoidance of harm is a primary ethical obligation, but determining harms and their avoidance in any given situation may be complex.”* (American Anthropological Association, no date)

Due to the researcher’s need to interview human subjects to obtain data, the University Ethics Review Panel’s approval was required before interviews or data collection methods could commence. Once this approval was received, interviewing began within two months. The Ethics panel are rightly rigorous and refining the proposal to conform to the required standard was an exacting process which ensured the research proposal was properly considered.

The collected information will be safeguarded in accordance with the Aberystwyth University policies and the Data Protection and Freedom of Information Acts to ensure confidentiality is preserved. The personal information published in the thesis has been made anonymous. Questionnaires and interviewees were given a coded number, and individuals have not and will not be referred to by either their own names or by anything else which could otherwise identify them. When being quoted or discussed within the thesis, all participants will be referred to as “she” regardless of actual gender. Demographic information collected has been used to explain and define the parameters of the population sample. The original paper copies with identifying details have been and will continue to be stored separately to all other documents, in a locked filing cabinet. Interview recordings will be destroyed once the research has been fully examined, in accordance with the consent agreements signed by the participants.

As stated previously in Section 3.8.3, not all members of a household participated in the research, for varying reasons. Some household members were not eligible under the ethical guidelines set out for the research, such as being under the defined age to be interviewed.

To ensure the integrity of both the interviewees and the researcher was protected, interviews with 16 - 17 year olds were conducted with a third party present, in a suitable public space as defined in Section 3.8.3 above and topics to be covered were limited to information seeking behaviour regarding environmental issues and were thus not considered to be sensitive.

Another challenge is ensuring the interviewer keeps the participants on topic and not veering off into personal information. At the close of one interview, an interviewee began to give the researcher information about their personal care habits, and then remembered that the tape was running and was quite embarrassed. The researcher assured the interviewee that the interviews were being reported anonymously – only they and the researcher will ever know who it was. This interviewee's behaviour confirms Lincoln and Guba's statement that *"Human beings are always in relationships – with one another and with the investigator as well."* (1985, p. 337) In this case the interviewee trusted the interviewer enough to disclose this type of information even though it was only partially relevant to the topic under investigation.

3.10 Contextual environmental background

As stated in Section 2.2, this study focussed on environmental information seeking issues. This study then analysed the data about recycling that was yielded from the interviews. Questions were asked pertaining to recycling and the participants' attitudes to recycling and getting information about recycling and environmental issues.

In response to the preliminary questions about recycling, participants discussed a range of items that they considered suitable either to be recycled or not recycled and places where they could go to do recycling, but would not necessarily expect to find recycling information.

As the newly introduced refuse and recycling scheme was changing the collection frequency, several participants who had not previously recycled were now doing some recycling, as they felt it was more beneficial to recycle as the items were

disposed of more quickly. One participant suggested that people were now more aware of items that could be recycled, due to the lists of acceptable items on the recycling bags. Glass and textiles are now the only recycling materials that are not collected by the new kerbside scheme and despite the fact that this had not changed, several participants did not like having to recycle their glass separately to the rest of their recycling. It was suggested that an effort assessment was involved and that recycling was an ongoing activity whenever someone from the household was likely to be passing a recycling point for glass, textiles or newspapers.

All study participants recycled in some way – at one end of the scale reluctantly because they felt they must, and at the other recycling absolutely everything possible.

Participants had to decide how much effort to make in deciding if items were suitable for the kerbside bags. Some participants put items into the recycling bag if they thought they were recyclable, while others put things in the landfill bag if unsure.

Although most participants seemed pleased that more was being done to collect recyclate, concerns were voiced by a few participants that the council was only changing the refuse system due to EU legislation, to meet targets and avoid fines on landfill collection quotas.

The study participants all have individual lifestyles and choose how environmentally friendly they want those lifestyles to be. They also all had various concerns about energy use and wastage, recycling, re-using of items, food miles and supporting local and fair trade producers. Participants discussed measures that they took to “do their bit” for the environment, based on these concerns.

Although almost a third of participants had used the council’s website to find recycling information, a quarter of these website users said it was difficult to navigate or obtain the required information, while only one participant commented that the information was there in full. This differed from their usual internet experience, as all the participants in the study who used the internet reported that they usually had no difficulty finding information online.

3.11 Summary

This chapter has detailed the contextual background of the interviews, the methods used and the rationale behind these decisions, as well as considering other possible research methods which could have been employed in this research

project. Theories which were discarded in this study because of lack of fit with the research question included grounded theory, content analysis, negative case analysis and analytic induction.

This chapter has also confirmed the study's aim which was to consider how ELIS activities and the information seeking behaviours which were used by the research participants in this study fit within Foster's revised model as well as examining how the influences exerted on information seeking activities by household members and peer groups fit within the extrinsic context section of the model.

The following four chapters will outline the results and analyse the themes which emerged from the data.

Chapter Four: Results and Analysis - Information Sources

In order to answer the research question of this study, one of the subsidiary research questions was to consider the information sources the research participants used to seek information. This chapter will discuss the different information sources identified from the participant interviews, as well as the participant's reasons for these choices. The information sources people choose and the reasons behind these choices are linked to the stage a person is on in their information seeking journey. This relates to Foster's framework depending upon which core process the person is using. Most information source choices are made during the orientation phase, but may change during the opening phase dependent upon the complexity of the information need being considered. Foster and Urquhart (2012) describe the orientation process as focussing *"…on identification of questions and directions to look and is composed of identifying keywords, picture building, defining a problem, and source identifying and source selection decisions."* (p.792) The following sections discuss the source choices made and describe how the research participants in this study chose these information sources.

4.1 Introduction to Information Sources

As shown in Table 4.1 below, (which was also shown as Table 3.9 in the previous chapter,) this study identified six main information sources, and two sub-groups. "People" is presented first as this code included the sub-codes of Peer networks and People as information sources – attitude.

Name	Sources	References
Information sources	24	130
Documents	28	80
Email and electronic information	4	6
Media	14	31
People	31	128
Peer networks	17	36
People as information sources - attitude	24	60
Places	13	21
Websites	31	119

Table 4.1: Breakdown of Information sources from interview coding.

The information sources were often consulted in order of preference. Several of the study participants had a specific chain of information sources they chose to use:

- P86 and P90 ask a person in the first instance, then resort to the internet
- P99 asks the landlord, then other people and will then use the internet

- P72 uses the internet first, then asks someone she knows

Agosto and Hughes-Hassell found that choice of information sources often became an issue of ease of access and *"… that availability largely dictated their media choices."* (2005, p. 157) One participant stated that they used the newspaper as it was available in the school, but would not if they had to purchase it themselves.

Three participants (P87, P91 and P98) were uncomfortable using the internet, but all were happy to ask their partners when they felt that the internet would have the required information.

> "Not really. I might turn to [partner, P88] and ask her to look it up on the Internet, to get rid of something or to get moved or something, you know. So, that's the only way because I can't do anything with computers. They drive me up the wall. I can't wait for the information." P87

All these participants were over 55 and also said that they were not interested enough to learn how to use the internet. P91 gave the following answer when asked if the internet was an information source they used: *"I don't use the internet so I don't know what's on there, but my [partner (P92)], will tell me – [P92] does you see. I don't need to, I have someone to do it for me."* Similarly, P98 asks her partner too if the internet is required, but claimed this was due to her personal laziness rather than an inability to use the internet. *"I always ask [partner (P97)] to sort out stuff on the internet. I'm a bit lazy. [Partner (P97)] is very good at finding information on there, so I use my resources to do other things."*

Interestingly, when asked about information source preference, P97 had said *"I'd go on the internet. [Partner, P98] can't. Well, [P98]'s very slow at taking an interest in things, but I'm so into it now, that I can go and look for things."* P97 went on to discuss how there had been training available to learn how to use computers and the internet but P98 had not shown any interest in wanting to do the training.

P101 was quite definite that apart from her parent, her only information source was the internet – when probed, she stated that she did not use any other formal information sources.

4.1.1 Trust of information sources

The level of trust participants placed in various information sources dictated their likelihood of using the sources. This theme is discussed within the sections pertaining to each type of information source.

4.2 People

Foster and Urquhart (2012, p. 974) suggest that intrinsic context may affect an individual's information seeking as the *"…as existence of a social network or access to experts"* for that person may mean they reduce the amount of actual information seeking (picture building) to making contact with one of these people.

It quickly became apparent during the interviews that people were often the first choice for getting information with little effort, as participants usually felt they knew someone who would know the answer to most environmental or recycling issues with the advent of the new waste management system. P90, for example, said

> "I use local sources. I ask my parents probably first because they are in the house quite often and then I will secondly go to my neighbours. […] Generally speaking I think it's been a case of communicating with my friends and neighbours in the community. […] And the third person, but that's just because I know her, is a friend who works for the Council."

Table 4.2 below shows the range of people that the interviewees said they consulted for information.

People as sources	By whom
Partner	P72, P85, P95
Word of mouth / Personal recommendation	P76, P84
Network of colleagues	P84, P88, P90, P107, P108
Neighbours	P88, P90, P107, P108
Parents	P88, P90, P100, P101
Friend	P88, P96, P102
Knowledgeable (expert) friend	P86, P88, P94, P96
Other people in the community	P90, P99,
Contact the council	P91, P98
Civic recycling centre	P90, P98, P108
Network of colleagues	P84, P88, P90, P107, P108
Ask the dustmen	P98, P99
Our landlord	P99
The hairdresser	P99
Post office staff	P91
Family member (non-immediate – e.g.: brother in law)	P96, P102

Table 4.2: People Sources mentioned during interviews.

P96 and P88 both felt they had associates who would be able to be of assistance, due to their environmental interests, with P96 saying *"Family, friends, […] I know people who work for some environment agencies and recycling, not recycling, energy efficiency places and I can always ask them."* and P88 suggesting *"Neighbours, people at work. I know a few sort of green minded people so I could probably ask them."*

Two further participants, P91 and P98, said they would contact the council. Both felt they were a reliable information source, with P98 stating:

> "Yes. I would also ring up the council. There's a number on there, so I'd ring them up if I wasn't sure. Ask the dustmen. They're very good. Oh, will you take that, no we can't, you do this with it, or this. They're helpful, actually. There's information too on the packets and things if it happened to be a packaging thing. To see if it's recyclable or not. Sometimes it says "some areas" and you can't tell. Actually, if I think they'll do it, I put it in the recycling and the sorters would know."

The other participant, P91, had an additional local information resource, suggesting that she would be able to get the information she required from more than one source:

> "I'd ring the Council. Or I can go down the post office and ask, as he seems to know quite a lot. He is on the Council so I presume it's the same really. […]Yes I would talk to people around – a local lady who has lived here a while, she can normally tell us."

Many of these comments reinforce the findings of Agosto and Hughes-Hassell (2005) and Lathey and Hodge (2001) that asking other people is considered to be the easiest way to access information, specifically family, friends, neighbours and peers.

4.2.1 Peer Networks

Peer networks are often made up of local groups of friends, family members or work colleagues and are a source of information sharing for many people. However, peer networks are becoming increasingly internet based. Part of the reason for this is that many families are now geographically more scattered than in previous generations. (See Haralambos and Holborn, 2004.) Facebook and other internet media are increasingly used to keep in touch, not just with family members, but also with friends and acquaintances. This topic in general is outside the scope of this study, but is relevant to the types of peer to peer relationships the participants mentioned.

Facebook is a source that several participants (P104, P108) mentioned as an information source or as an information sharing place. P108 described having seen a post on a user group of which they were a member of an individual asking for advice on how to get rid of an old 'fridge. Several people had posted answers before P108 saw the post, but she said

> "If that question hadn't had an answer on already by the time I saw it, I would have probably said contact the council. […] I only didn't respond because my information was out of date and I didn't know if a) they still did collections and b) what you did, so, because somebody else had already posted I didn't post again."

Both P90 and P99 had not lived in the Ceredigion area for very long – P99 had lived in the area less than a year at the time of the interview. Each of them said that they had relied heavily on neighbours and a network of people they had met locally soon after arrival in the area. P90 said that these people *"… seem to know these things. Innate knowledge they have about local stuff […] they have the right contacts. They've got their network, as it were."* She also said *"Although I moved here recently I know a lot of people locally because of child activities. [There's] a lot of community type stuff because [child] is in cubs and rowing so they have a lot of networks. So, I don't feel starved of information in any shape or form."* P90 added that she attended several local groups and that *"… if you ask one group and they don't know, someone in one of the [other] groups will know how to deal with most things because it is that kind of community. My network is quite good now, I think."* P99 also talked about networks of people that they used for household, recycling and environmental information, discussing the fact that her landlord had introduced her and her family to a variety of people within the village, who had all lived locally for a number of years.

> "… from the landlord, we sort of got networks of other people, like in the pub, sort of in the village, and most of them are people who have […] been here for sort of twenty, twenty-five years. […] You can find out about just about anything in this village. There's normally someone who knows something and the best place to find out something is the pub!"

That these kinds of peer networks are experienced in social places is supported by the work of Pettigrew (1999) in her treatise on information grounds.

Tsai and Kim (2013) note that peer influence is a major factor in information seeking. This is partly to do with trust in the information being provided. P76 discussed her use of social contacts when seeking information. She had been considering installing a wood burning stove in their home and had been unsure about the benefits and costs involved, so discussed it with a few friends who had already got such a stove. One of her friends used to install wood burners and suggested she talk to a friend of theirs. P76 went to see this person, who was so *"knowledgeable and impressive"* that they followed their advice and got the stove. When asked if this was a method that she used frequently, she replied that she did, as living in a rural area

> "… where personal contacts are so useful for so many things, you know, as opposed to a more urban setting. I don't think we would have had any trouble looking up the information if we had to, but it was so nice to get the personal recommendations and instantly talking to this person about wood burners we just knew that they were an expert. […] I suppose the need to go to somebody now as an

> individual is less frequent than it was before Google etc. But I still do because there are certain times when I would respect their opinion or I would think it needed local or specialist knowledge."

P76 went on to say that these personal contacts were usually used in addition to online or other sources, sometimes before and sometimes afterwards, depending on the information being sought:

> "Somebody might recommend something to you or tell you something, then you go and get it confirmed perhaps from an official source. It's a bit like the recycling, you know, I might have asked somebody something and then looked it up on the Council website to get some more details."

P107 discussed online peer networks – including social networking sites which are used for work information sharing, such as Twitter and Facebook. She finds the idea of relevant and interesting information being part of the feed of retrieved items to be beneficial. The idea that your network is made up of peers and acquaintances who share interests suggests that if one member of the network finds an item of interest, the likelihood is that other network members will also be interested.

> "With Facebook, it's a network of friends and acquaintances you build up, not always intending to but often, especially with Twitter because it's all work colleagues […] you tend to get the chain of information in network off people you know they'll find that interesting [so] I'll find it interesting too."

P107 went on to say that whilst impressed with the way in which Google's algorithms are able to prioritise certain items for retrieval, as a direct search query, it was disappointing that *"… what it didn't really do was give you the sense of I'm this person, so I'm likely to find this news story interesting, without having to put a [further] search in."* P107 went on to discuss how something of interest to one person might be of interest to another person within the peer network, and that that element of sharing the information provides power to the person doing the sharing, whilst also empowering the "sharees" who receive the information: *"I know something. My colleagues might find this interesting, so you share it. Power is given and power is given back."* The notion of information being a power commodity is supported by Chatman, who, when describing some of the features of a small world stated *"A society in which mutual opinions and concerns are reflected by its members, a world in which language and customs bind its participants to a worldview."* (1999, p. 213)

P84 and P108 also considered that word of mouth is a good information source – P108 suggested that this is because the information is usually via a person from your social network whom you already know and trust, while P84 suggested that 'word of mouth' involved a chain of communication:

> "If you see something, you'll tell a friend and they will tell a friend, sort of thing, even if it's good or bad, so I think that is probably the best communications as not everyone is computer literate."

P84 also discussed information networks – in her case it was a work network of peers in different locations undertaking similar work roles. If any member of the group had a query, they would email the network and request answers. In this way, all network members were able to contribute or receive information when required. P84 also said that it is a good way to get new ideas from other network members:

> "I'd send an email […] and I would get a response back. Then if they are doing something similar, or if they've got an idea, then it's great for us because I'm not then going down an avenues where it's going to fail and someone else is always in that loop, so we've got a great network. Also, they will get in contact with us if they need some information and I'll think that I haven't thought of that myself, and then we start to look at those things."

One participant also used an informal work network. In her case, it was a volunteer network of acquaintances that had a joint interest and helped out at specific events. She said she would either ask previous colleagues,

> "Or I would have to wait until I went down to the [name of] festival and ask there. With that kind of festival, there are a lot of people there that are heavily involved in the green movement, and so have looked into it further than I have." (P94).

Because of her background, people often use her as an informal source of information on recycling. Both P86 and P96 referred to her as an "expert friend" from whom they would seek environmental and recycling information.

P77 discussed the fact that information is often received informally via your peer networks. She stated that her *"… consciousness was raised fairly early on and I have always recycled"* due to the fact that *"A lot of people were talking about the same things that we are talking about now in the 70's you know, very concerned about the environment and so on and so forth."* She also mentioned receiving information via films and documentaries, as well as from reading books by people such as Porritt. P77 considers that some of her friends are still interested in the environment, and when discussing whom she would ask for advice or information, she replied that *"I have some friends who are very active in it, so they certainly know. Possibly [colleague, P104] and [colleague's (P104) partner]. They are very committed to the environment."* She went on to discuss how she would talk to friends and work colleagues about environmental issues if she needed information, as often people would have the information required and she could then access this information informally. P76 agreed with this viewpoint, saying she would actively

seek information *"… from your peer groups."*

One respondent said she would ask people she knew: *"… other people tend to be a big source of information, you know, within the village, and, erm, people who we've met."* (P72). Another interviewee who uses informal peer networks to obtain information is P99. She had recently moved to the area at the time of interview and had built a good local network of people who knew either local information or other people who did. During her interview, she mentioned a recent occasion when one person needed some specific information about water conservation and another said that they knew a person who would know. Since the exchange took place in the local public house, the "expert" person was called over and the problem was then deliberated upon. P99 said she'd found that there was a good community spirit in the village and people were quite welcoming and prepared to assist with any questions, going on to describe the process as having stemmed from talking to their landlord.

> "Then from the landlord, we sort of got networks of other people, like in the pub, sort of in the village, and most of them are people who have moved to the village at some point." (P99).

This reiterates the findings of Agosto and Hughes–Hassell (2005), as well as Tsai and Kim (2013), whereby both papers found that people were the preferred information source in most cases.

4.2.2 People as Information sources – attitude

This code within the people as information sources category was due to the study participants discussing the issue of who they would use as an information source based upon how much they trusted the information from that person. If they had received previous correct information from a person, they were likely to consult that person again, as they trusted them and their level of knowledge. Likewise if they had received information that was erroneous, they were less likely to either consult that person again, or to just believe that person without cross checking the information they provided.

Several participants discussed people they knew and trusted to provide correct information. P77 and P107 both said that they had friends and colleagues who were interested in recycling and environmental issues:

- "Certainly people who are interested in the environment. I have got some friends who are very active in it, so they certainly know." (P77)
- "There are certain colleagues who seem to be in the know that I might ask. I mean, other than that there's the, you know, very traditional, ask the neighbour, ask a colleague at work." (P107)

- "I am susceptible to people who I trust and what they are saying and doing and the people that I do generally trust tend to be people who are concerned about the environment and who tend to recycle, reduce etc." (P78)

P86 discussed a former colleague (P94) who is viewed as a trusted information source. Due to her work background and environmental views, P86 said she would not feel the need to cross reference information that came from her as she was *"… the sort of person who would say if they didn't know."* Similarly, P90 talked about a friend who used to be a local council member and is thus considered knowledgeable in the same way. *"… she still seems to know quite a lot about things, […] you know, community type information."* She also stated about this friend, that *"They seem to know these things. Innate knowledge they have about local stuff."* This stance is confirmed by Tsai (2010) who stresses the importance of interpersonal connections. Williamson (2005, p. 130) also suggests that people "…*such as family, friends, and colleagues,"* should be included as information sources, as they *"… play a significant role"* in information acquisition.

Agosto and Hughes-Hassell state that *"Under the people consulted, friends, teachers/school employees, parents and siblings were by far the most frequently consulted."* (2005, p. 147) This was borne out, particularly by the teenagers interviewed in this study. P71, P79, P80, P101 and P103, who are all teenagers, said that they would ask a parent about recycling or environmental issues. P71 also said she had an older friend and her grandmother whom she would ask if she needed information. While P75 (who is not a teenager) summed up this feeling by stating that she would probably ask her parents, even though they're not experts on recycling or the environment, but because to her they were a trusted information source. P103 and P83 use the school learning resource centre as they trust the staff there to provide good information about where to find information and are gatekeepers in a sense. Both also said they were comfortable speaking to the staff and happy to ask them questions.

Another reason people asked their peers for information – particularly local friends and neighbours - was to obtain local knowledge. P77, who was one of several participants who either could not drive or did not have access to their own vehicle,[2] said that she found her local taxi firm useful for local knowledge:

> "In a weird way taxi drivers know a lot because they are always driving people to

[2] P75, P89, and P95, also had no access to vehicles of their own, while P71, P79, P80, P83, P101 and P103 were all under the age of twenty one, some of whom had access to their parents' vehicles.

> lots of different places aren't they? And we have been using the company for [several] years now and they are sort of friends as well. […] our taxi driver, because he is local and will often know a lot of things so he can give a lot of informal information about what you can do about [recycling] things."

P84 discussed a recent issue where a local recycling site had been closed. Due to her work position, she was aware of all the circumstances surrounding this particular incident, but mentioned several cases where people had told her pieces of information that they had received from people they trusted, but which she knew to be false. P84 said

> "Yes, that's one of my pet hates when someone reports something that is untrue without checking it. [...] There is a lot of things that have been publicised in the press and also people have said to me that I heard from a reliable source that this is true. […] They have said well I trust this person and I have said well that's not true, and I know what is happening and I can prove it, I can take a day and show you, and they have said well you are lying to me."

One participant suggested that she was sceptical about the concept of global warming, mainly due to trust issues about the people publicising the information:

> "I don't trust the people who are saying it. People always seem to have an axe to grind. […] Politicians are completely untrustworthy on it. The guys who are running it seem to be making an awful lot of money out of it and they've twisted the scientific facts so I'm not really very enthusiastic about it. […] So I'm not saying that global warming isn't there, it probably is, but I don't know if it's necessarily man made." (P92)

When discussing how to get specific information on recycling a certain item, P100 said *"I found out from my Mum in the end, but it was more from asking people that I know but it would be better if it said clearly on the bag, you know."* This finding is supported by the work of Tsai and Kim 2013; and Markwei and Rasmussen 2015.

4.3 Documents

Several types of documents were mentioned in the course of the interviewing cycle. These are detailed below in Table 4.3. Newspapers featured as a strong source of information – particularly in the older Generation 1 participants, although all participants regardless of age consulted the local paper, the Cambrian News to some extent, although not necessarily to do with environmental or recycling issues.

Newspapers generally were more regarded as a quality information source by the participants. This is borne out by the research of Williamson (1998) who states that newspapers were the second most used information source in her study of older adults in Australia. Williamson (1998) goes on to say *"The high esteem which newspapers received as an information source supports the findings in the*

literature." (p. 32) Williamson (1998) goes on to list a range of research supporting this claim, such as Chatman, 1991 and Williamson and Stayner, 1980.

The following excerpt from Participant 92's (P92) interview transcript illustrates this view. When asked if the internet was used to get environmental or recycling information, she was definite that the internet was not the place to get trustworthy information (R= Researcher):

R: Ok, so going back to environmental and places where you would get information from, you mentioned the Telegraph, and you mentioned pulling it up on the computer. Do you use the internet as well?
P92: Yes. I don't look it up for green stuff.
R: No?
P92: No. [R: because..?] I think because a lot of that information, I prefer that to be from a newspaper that I know and that I can trust… I can't be sure of so much on the internet. It's too easy isn't it?
R: Right.
P92: Information that I'm not happy about. I haven't got time anymore I haven't got the brain anymore to work out that much in my mind, so I like to make sure what I'm reading from first.
R: Right, so you don't trust the internet because the information is not always verified and you don't want to have to make the effort to go and verify it yourself?
P92: Yes. That's right… One would assume that they had checked their facts before they've printed? ... As opposed to the internet, which is a lot more - in a state of flux?

This is the opposite of the view of P73, who gets nearly all news and current information from the internet, although she does also use other news information sources

> "I'd look at the, the news media both online, largely online, and, I don't tend to buy a newspaper - waste of paper, erm, and then it would be, perhaps the news on TV, or it might just be things like the Centre for Alternative Technology." (P73)

Table 4.3 shows the various documentary information sources mentioned by the participants. Several of the participants spoke about specific sources they used, such as P100, who stated *"When the recycling scheme first started a letter came through the post about what you could put in the bag."* and P98, who said

> "There's information too on the packets and things if it happened to be a packaging thing. To see if it's recyclable or not. […] Well, if it was about recycling, immediately, I would hook out the circular thing."

Two other participants discussed the paperwork which was sent out to households by the council when the new waste management scheme started. P90 stated

> "The piece of paper said, I've got it all at home so it was there. It was square, I put it on the fridge so it's there and we could see it but I've replaced that with the wheel now because it's more helpful. […] I just really use the wheel and the schedule to remember which of the two weeks we are on."

While another participant said the following:

> "They sent us, I must confess, it was a very well designed leaflet. […] I thought it was a really nice leaflet, it's the black leaflet with quite a few diagrams with different types of waste, instead of a whole load of text, you had pictures of things, like fish bones and apple and whatever, which said, put these in here, don't put this in here. So, I think if you drafted it for people whose English is not very good, or possibly partially sighted, obviously they'd taken some advice about design. Which is a good thing, rather than somebody had just run it off on a word processor." (P93)

Documents as sources	By whom	Notes
Magazines and magazine articles	P72, P76, P85, P104	(P76 mentioned the magazine with annual CAT Membership.) Other participants just mentioned they read magazine articles in unspecified magazines.
Scholarly articles	P85, P104, P107	Verified factual information
Books	P72, P74, P79, P80, P85, P103, P104	
Packaging	P84, P85, P98, P98	
Recycling bag	P72, P82, P84, P95, P100, P101	
Council recycling leaflets, poster or "Recycling Wheel"	P73, P75, P76, P77, P81, P84, P85, P87, P88, P89, P90, P93, P95, P98, P106, P108	All literature items issued by the council about the new recycling scheme.
General recycling and environment related leaflets	P74	At CAT.
Newspapers unnamed	P77, P78, P79, P80, P85, P87, P92, P93, P98, P104	Specific newspapers: The Cambrian News, P77, P78, P80, P92, P93 and P98; George Monbiot in The Guardian, P104; Christopher Booker in The Telegraph, P92; Sunday papers and The News of the World, P87; and Exchange and Mart, P87; Wired Magazine, P104
Work related magazines	P74	Unnamed to preserve P74's anonymity
Postal newsletters	P80	Smokebox – teenage anti-smoking information group
Yellow pages or directories	P87	(Yellow Pages)

Table 4.3: Information source documents used

This participant also said *"There's stuff in the newspaper, they had an advert in the paper the other day. […] in the Cambrian News."* A further participant discussed newspapers, saying that she uses a more serious newspaper as an information source:

> "I tend to read a heavy newspaper not the ones that just mess about, so you tend to get a reasonably reasoned argument. … The Telegraph … You should have a look on your computer and look up Christopher Booker. It's well worth reading some of his articles about the environment. Particularly global warming – he's an interesting fellow." (P92)

One of the findings of this study was that study participants generally used a physical aide memoire to keep track of what items could and could not be recycled under the new scheme. Almost half (16 of 38 interviewees) said they used the "recycling wheel" which was provided by the council at the start of the new scheme. One participant, P90, said that she had replaced the original paperwork sent out by the council with the "recycling wheel" *"I [had] put it on the fridge so […] we could see it but I've replaced that with the wheel now … because it's more helpful."* The following comment was made by P98 about the recycling wheel, including a description of the wheel's uses and other council recycling publications:

> "Well, the council have been very informative. They've sent papers and information through the door. Every household was told. They've given notice, it's been in the Cambrian News, the publicity I have found very good. And then the little disc they sent so that you can discover which resource is in place to aim your various items – black bin, household disposable sites, you know, in town, or recycling bag, you know, the clear bag. I think that's good."

Several people mentioned not being able to remember which waste was being collected in a particular week under the new scheme, which involved different collections of waste on alternate weeks, and used various aides memoire to assist them as well as looking out to see what neighbours had put out on a collection day.

> "So, I just really use the wheel and the schedule to remember which of the two weeks we are on. I often can't remember which week we're on. … I would normally ask neighbours, we have quite a good community where I am, and often when I have forgotten what day it is I just go to somebody else's drive to see who has put what out. Generally speaking more than one of us is not wrong!" (P90)

A few participants discussed their views on the paucity of information supplied by newspapers and media generally. P104 stated that she felt there was often insufficient information provided and then she felt that she wanted to go in search of more information, often at a later time, requiring her to make a note of items of interest that she did not want to forget but was unable to follow up immediately:

> "It's often like that, you initially just get a mention of something and you think it sounds like it should be interesting, but I haven't got enough information, you just haven't told me enough, you know. And the web's ideal, isn't it, because once you've got a lead…" (P104)

Another participant mentioned that she does not take the information provided by newspapers at face value:

> "I've got very used to cross-referencing as much as possible so I don't take for granted what one body tells me as I assume they have an axe to grind. If I read an article in the newspaper I usually look at two or three newspapers to see their different takes on it." (P85)

Agosto and Hughes-Hassell (2005) found that some of their participants used sources such as product packaging to gain everyday life information. This study was specifically looking at recycling, so packaging was an important and relevant information source. In this study, people used packaging to discover if an item or its packaging were potentially recyclable, as everyday life information. P85 said *"I try to make myself more aware by looking on packaging to see where it says this is recyclable and this isn't."*

4.4 Email and Electronic Information

Table 4.4 shows the overall breakdown of internet and electronic sources the participants mentioned in interviews. The websites are discussed further below. It should be noted that although Table 4.4 shows 31 websites as sources, when analysed, this was a set of 18 websites mentioned on 31 occasions during the interviews.

Name	Sources	References
Information sources	24	130
Email and electronic information	4	6
Websites	31	119
Forums and social media	4	4

Table 4.4: Breakdown of internet and electronic sources used

Several participants discussed how easy they found it to use the internet for information seeking, with several, including P72, stating that it was their first choice as an information source. This comment from her was typical of this sentiment:

> "I think, on the whole, the internet does tend to be my first port of call, as it's generally always there." (P72)

One participant mentioned using the internet at the library to find author information. She explained that this was

> "… because I can find things so much more quickly and easily without having to physically walk around and look for books. On there you have a list and you check names, look for names and see what kind of author somebody is by searching. It's all so instant on line." (P85)

She also suggested that looking physically for information *"… would be a lot more time consuming and harder to do."*

P76 commented that

> "… the internet is such a broad thing and I would get so much from that. You know, different things, I wouldn't be just looking for recycling information. I would be looking at other things."

P88 discussed that she receives email communication in the workplace with initiatives about recycling practices at her workplace and information about recycling locations and what items and may be recycled there. As mentioned in Section 4.2.1, several people interviewed in the study use email networks in a similar way to P88.

P108 receives a weekly information email from a financial expert, which offers tips and advice on household expenditure and current offers. From this, she followed up a lead and was able to apply for a home improvement grant from the government, as she trusted this informational email. She stated that she had used the links from the email to

> "… get more details about [it] and the companies that came out and did it and which one was the best and what kind of material […] was best. And from that we found a company that we contacted, which had good reviews." (P108)

P104 had been using the local Freecycle network, an organisation which allows people to offer their unwanted items for free via email to others who will then collect the items. She became disenchanted with the fact that people were mainly offering things that were not useful and unsubscribed from the list. She went on to discuss how her household researches large household purchases using the internet, but finds there are large gaps in the available information in connection with environmental information about such items:

> "It would be good if there were places where you could go and get information about, I don't know, the energy costs of things, so when you're making decisions about stuff, like what to get and to buy, […] and what the energy is to produce it and so on, there are big gaps, I think in our, or certainly in my knowledge of stuff, that we need, so I can see a need for information sources that would do that kind of stuff. I mean you can research the things and you can look them up on the web. […] But the last thing you find out is the carbon footprint of anything, anyway. Of an object you want to buy. […] I can see the need for lots of environmental information that we don't have to hand." (P104)

P108 stated that her household does all its research on household purchases online. They do not use paper documents – just online sources, primarily comparison websites. *"We've looked on the web when we're buying things like fridge freezers, when we've been researching which ones to buy."* Lopatovska, Fenton and Campot's 2012 and Sparrow, Liu and Wegner's, 2011 studies bear out this finding, that with information so easily accessible on the internet, many people now use the internet as their main information source. *"The advent of the Internet, with sophisticated algorithmic search engines, has made accessing information as easy as lifting a finger."* (Sparrow, Liu and Wegner, 2011, p. 776)

4.5 Websites

All participants in this study had internet access at home and if not retired, at their work or study place. All participants were able to use the internet, although, as previously stated, a few chose not to access it for information seeking. Typical comments regarding the accessibility of information on the internet were made by P73, who said *"I'd be very surprised if I wasn't able to find the information on the internet."*; P107, who concurred, stating *"I think since the birth of the internet, it's very difficult to imagine you can't find anything out if you don't want to."*; and P86, who added *"There is a vast amount of information out there on the net and the media which you just pick up on."* Another participant added that the internet has made a difference to the type and amount of information available:

> "For some things, perhaps, the internet has changed things greatly because even if it is a tiny fact that only concerns six people, […] with the internet, fortunately, if six people are concerned it means that there is probably something written about it." (P76)

Describing the types of environmental information sources available online, P73 said the following:

> "I suppose […] if you're investigating how people access information particularly online, I think there's a range of different kinds of information that's there. I mean you could be accessing search engines or you could perhaps go into specific sites so you... people might be going towards government web sites people like WRAP, people like Welsh assembly or they might be going for more unstructured activities they might be looking at something like Google or they might be looking at information sources such as newspapers or magazines, which are available online. So […] the stuff that is available online falls into quite a number of different kinds of things that people look for."

Table 4.5 shows the range of websites that were named during the interviews as potential online sources for recycling and environmental information. The participants mentioned two distinct types of website – those specific to recycling and environmental information and general website searching. An example of the former is P107, who said:

> "I go to the BBC farm pages, because that's for kind of global issues, things like environmental change, I tend to use Huffington Post (The Daily Caller) […] I use Twitter and Facebook as forums for sharing of information with students and my other work colleagues on the environment related issues."

Website name	By whom	Reason / Notes
Council / Ceredigion website	P72, P73, P76, P77, P85, P90, P95, P99, P100, P106, P107, P108	Recycling information
Google	P71, P72, P73, P74, P75, P77, P78, P79, P80, P83, P85, P89, P90, P93, P94, P95, P96, P102, P103, P104, P105, P106, P107, P108	Both general and global environmental issues and recycling information
Freecycle	P72, P104	Local recycling and reuse options
WRAP – Waste Recycling Action Project (A Quango.)	P72, P73	Recycling information
BBC Websites - various	P72, P107	General environmental information
Wikipedia	P83, P85, P93, P94, P103	Information on types of materials and if can be recycled
Busbro	P97	Travel information
Green workplace	P88	General environmental information
Friends of the Earth	P88	General environmental information
YouTube	P103	Tutorials for learning
Unspecified sites: "one of the Aberystwyth sites" "I use the web a lot." "The internet, obviously."	 P72 P90 P99, P101, P102, P107, P108, P86,	P72 and P107 specified several specific sites. P102 and P108 did specify Google as well as general internet.
Blogs, Discussion Groups and Forums – several mentioned, but none specifically named	P76, P79, P80, P85, P90, P95, P100, P107,	P79, P80 and P95 use forums mostly for gaming, but also for college work and occasionally for recycling information. P85 and P90 both use blogs/Discussion groups as additional information sources P100 uses forums to share recycling information P107 uses Twitter and FB forums to keep in touch with students and colleagues.
Atlantic Kitchen	P107	General environmental information
Government websites – any .org sites and Welsh Assembly sites	P73, P90, P107	General environmental information
Huffington Post – Daily Caller	P107	Global environmental issues
Facebook	P107, P108	P108: Aber Mums and Babies – good for general local info.
MoneySavingExpert.com	P108	Household environmental information
Bing	P71	General environmental information

Table 4.5: Websites mentioned during interviews.

Another participant who detailed specific websites was P84:

> "Generally what I would probably do is look on the internet for any information on the council website or any organisations that are nearby that such as a reuse facility or a charity shop and things like that."

However several other participants were less specific, with P77 stating that *"I would look on the Ceredigion Council website or do a Google search."* And P90 suggesting *"What I would usually look for are the governmental sites, or the ones that appear to have some sort of authoritative stamp to them."* P102 said *"Oh, well if*

I want information, I'll have a look on the internet." While P74 and P75 respectively said *"I'm going to say "Google"! It's always a starting point."* And *"No, just Google, really, for searching."*

As stated above, many of the websites mentioned in Table 4.5 are specific to recycling or to the local scheme and they were consulted for specific factual information either with regard to whether a particular item could be recycled and if so where, or in relation to the new scheme and which collection week a participant was on. These themes are considered for interest in Appendix Eight, as they are outside the scope of this study.

4.5.1 Google

As can be seen from Table 4.5 above, 24 of the 38 interviewees (63%) named Google as an information source they would use. (Note that allowing for the three non-internet users, this rises to 68.5% of the interviewees.) Hillis, Petit and Jarrett's 2013 book discusses the fact that Google is now considered an *"essential tool"* by many people when conducting any kind of online search, adding that *"Many younger people have no experience of the web before Google, which they first encountered as their browser's default search engine."* (p.3)

It is worth noting that Google is *not* actually an information source, although nearly all the participants within this study considered it to be an information source, rather than the *"essential tool"* for searching and retrieving similar or relevant information sources described by Hillis, Petit and Jarrett. (2013, p.3) The study participants as a whole tended to term "the internet" as an information source in addition to their description of Google and other search engines as information sources.

Despite this, some of the academics and professionals who were interviewed for this study appeared or actually were apologetic about their use of a particular search engine, with one participant stating *"Dare I say it, I did a Google search!"* (P89), while another said *"… then I would go and do a bit of, I hate to say it, but Googling. I would Google with an educated whatever. I wouldn't go just on there."* (P90)

The remainder of the participants were pragmatic about their use of Google as an information source, often just stating that they would use Google. The rationale for this appears to be that Google nearly always has the answer, whatever the question. P80 typified this view, saying *"Well, generally if you type a question into Google it will come up with what you want, and then you just look at the sites that have got the*

information you want on.", with P78 suggesting *"Well yes, I would try more systematically back to the internet and try to Google it, I guess, normally."* Another participant, P77, suggested that she would use Google as a second choice if her preferred website did not provide the information she sought:

> "I think a lot of the time these days with the Internet, if it was something like the appliance issue, I would look on the Ceredigion Council website or do a Google search.[…] If the Council don't have the answer I would probably just Google it."

Several of the participants simply stated that Google was their first website choice in an information search, with P85 saying *"I use Google as a search engine."* And P94 stating *"I chuck things into Google, see what they have."* As can be seen from these last comments, there were different levels of understanding of computer architecture among the participants, which may be due to the diversity of education levels or ages of the participants, some of whom were retired, with others still in upper secondary education. P106 gave the one word answer *"Google."*, and P102 uses Google as her default search engine, but when asked in the interview if she used a specific search engine when using the internet, she did not know the meaning of the term search engine. After careful prompting, it emerged that Google was in fact the search engine she used. P107, on the other hand, had a full grasp of the fact that Google is a profit generating organisation, targeting users with personalised advertising, based upon search histories and using a relevance ranking algorithm. *"Google, when Google came along, that was an amazing thing, because suddenly you had this search engine that seemed to understand what to order in terms of priorities of what you were looking for."* P107 was slightly sceptical about the fact that Google is using this data and it is in the company's interest to get the ranking of results right in order to maintain market share, adding *"And I think that there is a real shift in the mass of internet data where you can do a general search and get a calculation algorithm of what might be a top search priority."*

One of the reasons Google is so widely utilised is that it is easy to use, requiring only a natural language phrase or keyword to search for an answer to a question. From a quick single word search, a list of results ranked for relevancy, according to Google's algorithms, is returned to the searcher. The remaining search is limited by the skills of the searcher and their ability to differentiate between the types of information given by each result.

P90, who described herself as an experienced web user, follows the steps

detailed below to assess the value of the results returned:

> "You get however many hits don't you and you then have to look for – sometimes it's easy to see straight away what the official line is going to be and which sites - if I can't tell from the address, then I will go into the actual entry and if it ends in .org then I know it's going to be that. Equally on a .org site you might get a tangential comment and it's not the one that has the information that I need but at least I'm going to those sites. But, if I can't find stuff I will go into the actual entries and see if they provide the kind of information that I'm looking for. There is a lot of trawling through, even when you've self- selected some of the sites."

P102, on the other hand, when asked if she would check information received from a Google search, said *"No, I'd just think it's right, I suppose."*

One of the findings of this study is that with one exception, the younger the information seeker, the less checking they will do of the information they find on the internet, Google in particular. At least one of the teenagers interviewed mentioned that often the top two or three results were repeated further down the list of results on a Google search, seemingly totally unaware that the first results are often sponsored advertisements. An example of this was the following comment from P71:

> "I just follow the first one as long as it's not Wikipedia. If it's something that I needed to find out and it made sense in my head, then I'd use that. I wouldn't look any further."

The one exception to this rule was P102, who falls in the over 55 age range and was quite happy to accept the first thing Google returned as a result. The remainder of the over 55 group were the most active at checking the information they found on the internet, often cross-checking with as many sources as they were able to find, both on and off line.

P104 commented that it was worrying that people were not aware that the information returned by a Google search was not actually from Google, but from the internet.

> "Well just the fact that they're relying on Google shows a lack of knowledge about where the information is coming from. It's not coming from Google."

Google, as well as being a frequently used information source by the study participants, is also considered a trustworthy information source, which will be discussed in the next section.

4.5.2 Trust of website information sources

The participants, as briefly discussed above, had a range of trust levels of information returned by Google. This intensified to information site preferences, with some participants favouring government or council websites while others were happy to trust information from blogs, discussion boards, Google and Wikipedia.

When discussing trust of information from the internet, several participants mentioned that they cross checked the information they found, often by going to two or more websites and comparing the information, however, there were a few who said that they just used the first result on Google, basing this upon the fact that it's on the internet so it must be right. In response to being asked "Do you always trust everything that you see on the internet?" P79 said *"I usually trust them, nine times out of ten. [R: Because?] Because it's usually right."* When questioned about the tenth time, she said she would ask a person for the information. Her sibling, when asked the same question, responded that she does not trust everything found on the internet, but did not seem to have a particular strategy for checking information.

Participants trusted official websites such as government or council websites, more than they trusted other websites, such as Wikipedia or blogs or discussion forums. If a site had a clear author, this inspired the participants to feel confident that the site content would be correct. P85 said *"… if I want to find out some factual thing I will either look at articles and at scholarly articles, as well."*, while P78 said that *"… there are organisations that I sometimes do go to but not often. If I did, it is probably via their website I would try to get information there."* Several participants expressed a preference for seeking information from official websites in the first instance, P90 stated she *"… would usually look for are the governmental sites, or the ones that appear to have some sort of authoritative stamp to them. So, I always look for those first."*, while P103 said *"If it was from, like, a government thing, then I would probably assume that it was safe."*

As mentioned in Section 4.5.1, the older generation cross checked the information more than do the younger generation of information seekers interviewed. The middle generation did more cross checking than the younger generation, but less than the older generation. This may have been due to time constraints, as the majority of the older generation participants were retired and had more available time to spend on checking information. However, it may be that the older generation are less trusting of internet generated information. P85 discussed an early experience of internet searching where she discovered several identical websites, all purporting to be from different organisations:

> "They don't care who put it up there. I learnt it very early on in the days when I started using the internet and Google or (whichever one it was at the time) because I looked up something on [subject] and thought oooh look it's got this and then saw another article from somewhere else and read it and it was exactly the same and

> then a third one a bit further on and it dawned on me that someone, not necessarily any of these, has written something, they had all stolen it and if one of them got it wrong they are all promulgating their own ethics. If they have put something on that is incorrect, and I know about it from my own experience, that's wrong. All these pages going out and teaching all these people."

As a result of this early internet experience, P85 went on to tell me that she uses internet sources where she is able to check authorship and references to what the person has written, including using Google Scholar pages:

> "I'll either look at places that I consider are fairly reputable sources, in other words, not blogs, very few blogs. There are a couple written by scientists that I found when I was looking at climate change. […] I always check sources, but blogs in general. But, yes, I check. I remember checking out one on climate change and I thought good grief this chap has all these university qualifications and I liked the stuff he was doing in his research anyway and I thought that was good. I know they are not usually like that but also if I want to find out some factual thing I will either look at articles and at scholarly articles, as well."

She also said that she *"… might use Wikipedia in passing or at the start, I don't rely on it."* (P85), using it as a starting point to find other, more reputable sources, via the related links on the pages. P94 also expressed distrust in Wikipedia, suggesting that she would double check information she found on Wikipedia by also putting it into Google, *"Wikipedia can be a bit tricky. […] I chuck things into Google, see what they have." Two other participants,* P83 and P103, also considered Wikipedia to be unreliable, with them stating, respectively, *"Wikipedia is all not reliable, because it gets changed so many times…"* and *"Well, it's made by the people."*

P108, who falls into the middle generation in this study, trusts certain websites on certain issues. During a search on home insulation and energy saving, she used the MoneySavingExpert.com website and followed their advice on whether to install additional loft insulation, because she trusted the authorship of the site, with its mix of in house and government links.

Mrugalska and Wyrwicka (2015) in their paper on information sources used by prospective higher education students, state that

> "... modern technology provides a variety of new information delivery systems, sources and channels, which are accessible at anytime from anywhere. However, it is important to emphasise that the easy access to them does not have to mean that all retrieved information is relevant, reliable, valid and of sufficient quality." (p. 127)

They go on to outline, as discussed above, that electronic information sources' validity needs to be verified by the user to enable trust of those sources.

4.6 Forums, Social Media and Blogs

Forums and social media such as Facebook and blogs were mentioned by nine of the participants as information sources.

4.6.1 Forums

Forums and discussion boards were mainly used for gaming or for college work by P79 and P80; while P85, P90 and P95 use them as additional information sources; P107 uses them to keep in touch with students and colleagues; but all participants who mentioned forums said that they used forums to exchange information. P79 and P80, who were interviewed together, said that the forums they would use are not authoritative, as they are mainly populated by people of their age group:

> P80: The trouble is with the internet and forums, is that it's generally the people on them are people like us, discussing the subject that we're looking for…
> R: Yes?
> P79: … so it's us giving information, with basically people our age or people older than us, discussing it, erm the subject, so you get a varied amount of information, so you've just got to look for other websites and compare. And then you find the official sites and go on there and you might find the proper information.

This seemed to be a universal feeling, as P90 sums up:

> "I might go on to a forum or a blog thing to see what people are saying but I know that is not verified information. […] I will look for forums and things but I am looking for different sorts of information there, if the governmental type one hasn't said what I need the answer to, I might see if anybody else has had the same problem and the answers often come out in the forums or if I am trying to gauge strength of feeling on things. That kind of thing. So I probably do authorised sites first and then look for more discussion groups."

P100 discussed that she felt people were generally unaware of certain environmental and recycling issues and that forums were a good way to raise people's awareness, but then said *"I'm still not sure that enough is being done to put that information on forums and things."* P95 had searched for recycling information by trying to find a forum, but with no success: *"I just Googled, but I was hoping to find some sort of forum and I checked the council's site."* P76 mentioned forums, but in the traditional open meeting context, rather than in an online sense.

4.6.2 Social Media

P107 and P108 both use Facebook to get local information and to keep in touch with friends and colleagues. P107 also uses Twitter for the same purpose. She discussed the fact that Facebook, which she said is essentially *"… a network of friends and acquaintances you build up,"* enabled personal empowerment, saying:

> "Things like Facebook, give people who haven't previously had one, a voice, because all of a sudden they can actually say what they want, well, more or less what they want, a Facebook page is going to get shut down if they put offensive stuff up on there." (P107)

One participant had recently seen a person attempting to get local recycling information on a Facebook group of which she was a member. She did not post a reply to the question posed, as by the time she saw the entry, another member had replied with more up to date information than she had available. She did say that if the other person had not already replied to the post, she would have commented, advising the seeker to contact the council on the issue. When asked if she would post a question to this group herself, she replied that she probably would, explaining *"… there's usually somebody somewhere that's had the problem before."* (P108). Both participants use social media as an informal information source and as a way of maintaining contacts and friendships in addition to receiving and sharing local information. Khoir, Du and Koronios, (2015) stated that *"Social networks (both actual and virtual) and information sharing are integrally linked […] when people meet and communicate (either in physical places or via online media) in the form of social interaction."* (para. 8, no page number available) Both P107 and P108 are extensive internet users and use more official information sources such as government or council websites to obtain more formal information when needed.

4.6.3 Blogs

Blogs were widely distrusted by both participants who mentioned them, P85 and P90. Both felt that they were an interesting information source, provided the authorship of the blog was clear and could be checked by cross referencing. Even so, both only used them as an additional information source to obtain other information source leads. P90, expressed both participants' opinions, with the following comment "*I might go on to a forum or a blog thing to see what people are saying but I know that is not verified information."*

4.7 Media

Media, according to Reitz (2002, citing ODLIS), is *"A generic term for nonprint library materials (films, filmstrips, slides, video recordings, audio recordings, CD-ROMs, machine-readable data files, computer software, etc.).[…] In a more general sense, material in any format that carries and communicates information content*. *[…] Also refers collectively to all the channels through which information is*

broadcast, including radio, television, cable, and the Internet." [Reitz's emphasis] Internet media sources have been considered above.

Media sources mentioned in interviews are shown in the following table.

Media Sources	By whom
Documentaries on television	P72, P79, P80, P85
Television programmes	P72, P85
Radio programmes	P72, P76, P77, P78, P85
Newspapers	Details in documents (Section 4.3)
Television News	P73, P102, P104

Table 4.6: List of media sources mentioned in interviews.

P76 suggested that it was possible to get *"… a general public awareness from the media"* about issues such as recycling, although the more detailed information needed to be sought at a more specific, local level, for example from the material sent out by the council about the new scheme. P86 echoed this view, saying *"… there is a vast amount of information out there on the net and the media which you just pick up on."*

Several participants mentioned that they often had the radio on in the background, and were aware that they obtained information passively in this manner. One participant said that she listened to particular programmes on the radio, even while being aware of bias in the information being broadcast:

> "I like to think that by listening to Radio 4 including certain science programmes. I like to think that I am getting an impartial digest of the available research but I am influenced by individuals, for instance, I can't think of any names in particular but I mentioned my [child] as somebody I know personally. There must be people who I hear on radio who I respect more than somebody else and I would tend to be convinced by them which are in a way opening myself to biased information." (P78)

When asked how she got information generally, P102 replied *"I watch the news on telly. You wouldn't know what's going on otherwise, would you?"* P104 also watches the TV news, but also discussed the fact that research and science are presented in a certain way by the media, which is often more about making a sensationalist point than actually presenting factual information. She referred to the now discredited research from a few years ago which erroneously linked MMR vaccinations to autism. This piece of research was flawed, but the piece presented by the media did not represent all the research, just this particular article, which thus presented a biased viewpoint. P104 is sceptical that the public are not always given the full facts on issues by the media, and endeavours to find out more via her own efforts. She also said that

> "… it would be nice if we, […] would be able to make it be more normal to be pointing to references and sources and stuff, where you can actually find it out and check what is real. Because it's so hard, for the person on the street, or even you or I, to work out what's going on and you hear something and you think it doesn't add up, you can't refer to a bit of research which is never very particular and you know and looks at a certain [viewpoint], and see what it was based on and see [it's not] exactly mainstream because it was only looking at a certain sub-set of people and their particular situation, gave a result which was frightening but not given the constraints of the research. But you don't know all the constraints, because they haven't got time to tell you about that…" (P104).

She then went on to describe personal misgivings about how while the general increase in research should be a good thing, it also means that it may become more difficult for the public to access the research sources and get to the full truth of the research, *"… because it's harder to get to the sources and then you've got to work out what it means, why these results were as they were."* She cited another recent example where one piece of research had been discredited by a national body, but the research was still being used to illustrate cancer cluster stories, with no reference made to the discrediting. P104 was concerned that

> "… this happens all the time, in every walk of life. In any controversial subject, and this is what's going on, searching for a cure for cancer, climate change, you know, all these issues, which is what happens. Bloody annoying! Part of the original research ought to have a get a label on it, it shouldn't be able to stand alone, still."

She goes on to say

> "Well I believe in being enlightened, because I believe in scientific method in fact, the way that we're still using information is not good, because it's taking things back even if we ignore certain findings, you know, and use facts that have been discredited, then we're not making much progress, you know, along the path to enlightenment."

P104 went on to describe how often environmental publications did not include sufficient references to the science being quoted to enable a reader to establish the veracity of what was published, which she found irritating.

4.8 Places

Several participants (P87, P92, P95, P98, P100 and P108) stated that if they had items they were unsure could be recycled, they would take them to the local refuse and recycling site, which is a staffed council facility, as there were always people there who knew what items could be re-used or would have to be sent to landfill. A typical response was the following from P98:

> "Well, I'd take it down to the civic recycling. And ask them. Because they would know, because they do take stuff in, if it can be reused. When we've done that for a few things, they've been very, very helpful. Nice people we've found."

Additional places mentioned by participants as sources of recycling information were

- Visiting places such as Centre for Alternative Technology
- Tourist Information Centre in the town centre (again, a staffed council site)
- Recycling points in the town centre car parks or at supermarkets such as Morrisons and the Co-Op
- Charity shops
- Village shop
- Library / School Learning Centre

P103 and P83 talked about how the learning centre at their school has a large amount of information resources as well as knowledgeable librarians who can suggest and help to locate information sources and materials for information seeking.

Study participants also discussed organisations they would contact, although not necessarily by visiting them, if in need of recycling information. These included

- CAT - Centre for Alternative Technology (P72, P96)
- CAVO – Ceredigion Area Volunteer Organisation (P87)
- Citizens Advice Bureau (P87, P92, P98, P99, P100, P107)
- Ceredigion Council (P74, P97) (Note: several participants also stated they would use the Ceredigion Council website to search for information.)
- The Carbon Trust (P74)
- National Library (P80)
- CRAFT - Originally a charity named Ceredigion Recycling and Furniture Training, now a recycling and reuse, not for profit organisation (P82)
- WRAP - Waste & Resources Action Programme (P72)
- Greenpeace (P104)

One participant, who mentioned Greenpeace, was somewhat scathing of some of their literature, suggesting that they have a tendency to sensationalise their information in order to get attention for the point they were making. She was unimpressed by this tactic, not deeming it necessary:

> "I suppose over time, you also become more critical of information sources. I'm quite aware, for example, I'm a member of Greenpeace – a lot of their publicity material is just too, well, it's inaccurate, I think many of these special interest groups go over the top and they don't take too much care of the information, I don't believe. They overstate their case and it's bad, and they don't need to do it. They don't need to tell porkie pies, but I think they do. So I'm quite sceptical of that. Of the way that the organisations themselves put out information. So I suppose the answer is that I read fairly widely and I try and get different points of view on a subject." (P104).

4.9 Summary

People get information from a variety of different sources, including places and people depending on the circumstances and the immediacy of the information need. Foster and Urquhart (2012, p.794) state that intrinsic context affects an individual's

information seeking as the person may have some subject knowledge or may be aware of the *"… existence of a social network or access to experts."* This means they can then reduce the amount of actual information seeking within the picture building activity stage of orientation to making contact with one of these people to answer their information need.

A variety of internet and media sources, as well as printed literature were used by the study participants. The internet and media sources included search engines, emails, social media sites such as Facebook, various blogs and Twitter as well as radio and television programmes. Printed documents included newspapers, leaflets, official publications, books and magazines. The level of trust participants placed in various information sources dictated their likelihood of using the sources.

The people interviewed in this study have various preferences of information source, which is also often dependent upon circumstance and information need immediacy. It quickly became apparent during the interviews that people were often the first choice for getting information with little effort, as participants usually felt they knew someone who would know the answer to most environmental or recycling issues. These preferences and their impact on information seeking behaviour are detailed further in the following chapter. People's choice of information source is usually based on trust of either the person being asked or the reliability of the non-human source being accessed. This trust is based upon prior experience in the main.

The information sources were often consulted in order of preference. Several of the study participants had a specific chain of information sources they chose to use. Agosto and Hughes-Hassell found that choice of information sources often became an issue of ease of access and *"… that availability largely dictated their media choices."* (2005, p. 157)

Peer networks are often made up of local groups of friends, family members or work colleagues and are a source of information sharing for many people. P99's experience and use of social networks for info seeking, such as pub, hairdresser, and landlord show that these networks are a valuable information resource. That these kinds of peer networks are experienced in social places is supported by the work of Pettigrew (1999) in her treatise on information grounds.

Tsai and Kim (2013) note that peer influence is a major factor in information seeking. This is partly to do with trust in the information being provided and partly

due to trust in the person providing the information. Tsai (2010) notes the importance of interpersonal connections. P76 discussed her use of social contacts when seeking information. This theme is discussed further in Chapter Six.

It should be noted that peer networks are becoming increasingly internet based. Part of the reason for this is that many families are now geographically more scattered than in previous generations. Facebook and other internet media are increasingly used to keep in touch, not just with family members, but also with friends and acquaintances.

Several types of documents were mentioned in the course of the interviewing cycle. Newspapers featured as a strong source of information – particularly in the older Generation 1 participants, although all participants regardless of age consulted the local paper, the Cambrian News to some extent, although not necessarily to do with environmental or recycling issues.

Newspapers generally were more regarded as a quality information source by the participants. This is borne out by the research of Williamson (1998) who states that newspapers were the second most used information source in her study of older adults in Australia. However, one participant, P104, described how environmental publications often did not include sufficient references to the science being quoted to enable a reader to establish the veracity of what was published, which she found irritating.

One of the findings of this study was that study participants generally used a physical aide memoire to keep track of what items could and could not be recycled under the new scheme. Almost half (16 of 38 interviewees) said they used the "recycling wheel" which was provided by the council at the start of the new scheme.

All participants in this study had internet access at home and if not retired, at their work or study place. All participants were able to use the internet, although, as previously stated, a few chose not to access it for information seeking. Three participants were uncomfortable using the internet, although this was more to do with them not wanting to spend the time to learn how to use it, rather than not trusting it as an information source, as they all stated that they asked their partners to get information from the internet if it was required.

When considering the internet, 24 of the 38 interviewees (63% - Note that allowing for the three non-internet users, this rises to 68.5% of the interviewees) named Google as an information source they would use. One of the reasons Google is so

widely utilised is that it is easy to use, requiring only a natural language phrase or keyword to search for an answer to a question. From a quick single word search, a list of relevantly ranked, according to Google's algorithms, is returned to the searcher.

The participants within this study nearly all used the internet to search for information on environmental issues. The study participants as a whole tended to term "the internet" as an information source in addition to their description of Google and other search engines as information sources. They nearly all appeared unaware that Google is *not* actually an information source, rather than the *"essential tool"* for searching and retrieving similar or relevant information sources described by Hillis, Petit and Jarrett. (2013, p.3)

When discussing trust of information from the internet, several participants mentioned that they cross checked the information they found, often by going to two or more websites and comparing the information, however, there were a few who said that they just used the first result on google, basing this upon the fact that it's on the internet so it must be right.

Forums and social media such as Facebook and blogs were mentioned by nine of the participants as information sources. Forums and discussion boards were mainly used for gaming or for college work by P79 and P80; while P85, P90 and P95 use them as additional information sources; P107 uses them to keep in touch with students and colleagues; but all participants who mentioned forums said that they used forums to exchange information.

Several participants use Facebook to get local information and both Facebook and Twitter to keep in touch with friends and colleagues. P107 considers that Facebook, is essentially *"… a network of friends and acquaintances you build up,"* and enabled personal empowerment

Blogs were distrusted by both participants who mentioned them, who felt that they were an interesting information source, provided the authorship of the blog was clear and could be checked by cross referencing. Even so, both only used them as an additional information source and to obtain other information source leads.

A range of media sources were mentioned in the interviews, including television, radio, and newspapers. Several participants mentioned that they often had the radio on in the background, and were aware that they obtained information passively in this manner. Although none of the participants actively sought initial information from

the media in relation to environmental issues, several participants followed up information in which they had an interest by using newspapers or tuning in to particular radio or television programmes.

A range of places and organisations were also used as information sources by the study participants, ranging from the local refuse and recycling site and the Centre for Alternative Technology to visiting places such as the local village shop, local tourist Information centre and libraries or school learning resource centres.

The information source choices described in this chapter show compliance with Foster's nonlinear information seeking model in that all the information seeking activities noted would fall within the orientation process of the model, specifically source selection, source identification, problem definition and identifying keywords.

This chapter has considered the range of information sources consulted by the study participants, their reasoning behind these choices and the levels of trust with which these sources are imbued.

Chapter Five: Results and Analysis - Information Seeking Behaviour themes

This chapter will discuss the various information seeking behaviours revealed by the participant interviews, setting out the broad information seeking behaviour themes, followed by how the participants retrieved, used and then disseminated information. The information in this chapter is descriptive in places as this was the best way to present the rich data collected and show the context of the information seeking behaviours identified.

Foster's nonlinear information seeking model has three core processes; opening, orientation and consolidation, with each having certain information seeking behaviours as typical of the processes. Foster's research has concentrated on academic work place information seeking, which can often be more intensive than the information seeking required for an ELIS issue. The research participants within this study often moved between opening and consolidation without entering the orientation process. Foster and Urquhart (2012) found that *"… the undergraduate student descriptions of search strategies […] were far briefer and focused on the required outcome, moving swiftly from opening to consolidation with little evidence of orientation as a process that takes time."* (p. 800) The research participants in this study displayed a similar, short burst of focused information seeking activity.

As stated in Section 1.3, the aim of this research was to consider the influence of social networks of family and peers on information seeking behaviour, using Foster's non–linear information seeking framework. This research particularly considers whether this influence applies over an individual's lifetime to changes in patterns of an individual's information seeking and use, reinforcement of information seeking habits, sharing of information, or learning of skills that may depend on new information and communication technologies.

5.1 Information seeking behaviour themes

As stated in the previous chapter, people use a variety of sources of information. This is confirmed by Vasconcelos, Sen, Rosa and Ellis (2012) whose study on young people coping with long term illness found that *"The information they needed was gathered from a variety of sources."* (p. 140) The sources listed included a variety of people, groups and the internet. Most people have a preference of information

source, which is often dictated by ease of access or habit, which is discussed further below.

5.2 Information Seeking Habits

People use a variety of different methods to obtain information, both directly and passively. However, as previously stated, most people have a preferred way to do this, which becomes habitual. P72 said that when she has an information need *"I suppose I tend to satisfy them [information needs] by going to the same places"*

Table 5.1 shows the participants' information seeking methods choices. In this study, it was found that 63% of the participants' first choice of information source was the internet, (24 of the 38 participants) because most people interviewed in the study have easy access to the internet. All participants in the study had access to the internet either at home, work (or school / educational institution), or both, as well as via their mobile phones in some cases.

Method of information seeking	First choice	Second choice	Third choice
Internet	P71, P72, P73, P74, P76, P79, P80, P81, P82, P83, P84, P85, P89, P90, P94, P95, P96, P102, P103, P104, P105, P106, P107, P108	P75, P77, P78, P86, P88, P92, P93, P97, P99, P100, P101	
People	P75, P77, P78, P86, P87, P91, P97, P99, P100, P101	P71, P72, P73, P74, P76, P80, P81, P83, P84, P89, P94, P95, P96, P98, P102, P103, P104, P105, P106, P107, P108	P85, P92
Documents, books	P89, P92, P93, P98	P79, P82	P78, P81, P83, P87, P97, P103
Telephone		P87	
Media			P102

Table 5.1: Information seeking method preferences

The second choice of information source for 22 of the 38 participants (58%) was a person they knew, that they thought would know the answer to the immediate information need without having to make any effort themselves. This is confirmed by previous studies – particularly Agosto and Hughes-Hassell (2005) who found that their participants, *"… explained that faced with a need for everyday life information of almost any type, they would first turn to a friend."* (p.150) They reiterated that *"…*

people are the most important sources of everyday life information." (p.155) It should be noted that Agosto and Hughes-Hassell's study centred on urban teenagers, so is not representative of the whole age spectrum of the population. One instance that bears this out is that Agosto and Hughes Hassell found that their teenaged participants used their mobile phones as their second choice after people as an information resource, as well as finding that teenagers would use technology in any form before using any print based resources, (p. 162) which was not a finding of this study.

In addition, Agosto and Hughes-Hassell (2005) found that their participants showed a preference *"… to engage in information seeking with people they knew on a personal basis because they trusted them more."* (p.152) In this case this was rather than trusting people that they did not know for their information seeking pursuits, although they also state that *"… participants identified humans as their preferred avenue for information seeking."* (Agosto and Hughes-Hassell, 2005, p.148)

In another study, Bronstein (2007) found that when information seeking, *"Participants judge information not only by its characteristics but also by the perceived quality of the information channel."* (para. 40, no page number available) This statement confirms that the choice of people as information sources has more to do with trust and expectation that the person in question will know the information required and will be correct, than it has to do with ease of access to that person. The researcher found that several of the participants would contact a person who was not immediately local or available to speak with on a face-to-face basis if they considered that person would have the necessary information. Various methods of contact were used, ranging from telephoning or text messaging, to using internet methods such as social media contacts or via specific interest forums.

Agosto and Hughes-Hassell (2005) also state that

> "… participants decided which people to consult and which media to use based on established human relationships, question topics and the location of the information seeking. […] their choices are guided by the "it depends" principle, supporting McKenzie's (2003) emphasis on context in ELIS behaviour." (p.158)

5.2.1 Browsing

The participants within this study all had access to the internet and used this as a regular source of information. As discussed in Chapter Four, nearly all the participants were aware of a need to check internet derived information for veracity,

even if it was only by using a different website. The participants all described browsing behaviour starting with a key word or phrase search in an internet search engine, followed by considering the results listed. Keywords and phrases used in the searches included terms specific to information seeking relating to recycling and the disposal of household items, such as: recycling, refuse, glass recycling, wood recycling, etc.

A definite pattern of search activity emerged from the interviews, which is typified by this set of information seeking steps described by P83 and P103. (The results from these participants were chosen as they were characteristic of the entire population sample.)

1. Enter a keyword or phrase in an internet search engine
2. Peruse the returned webpage results and decide which ones to look at
3. Look at two or three of the results, comparing the information provided, considering the authorship and reliability of the pages and then following any relevant links
4. If all these pages are similar, stop searching
5. Occasionally cross check information with documents such as books or with other people
6. Stop searching, as usually satisfied information need at this point.

Although the steps outlined above are only attributed to P83 and P103, it should be noted that all the participants followed a broadly similar pattern when using the internet to search for information. It is also worth noting that the older generation often looked at nearly all the results in turn, often continuing to do so for several pages of results, while the younger generation often only looked at the first page, sometimes only the top few results.

Within Foster's model, several activities within each core process are considered. Due to the Foster model being based in an academic workplace setting and this research being in a non-work setting, certain of the information seeking behaviours prevalent in Foster's model, such as breadth exploration, chaining and monitoring were not evident in the information seeking activities of the research participants in this study. Key word searching and eclecticism, however, were evident in the participants' search activities.

During the interviews, participants discussed the ways in which they would

formulate their searches and most of the participants just chose a single word to enter into an internet search engine as a starting point and then broadened their search dependant on the returned results, often just by picking results they thought looked as if the information they sought might be included. These actions would fit within the core process of orientation and opening in Foster's model, as the participants chose their search criteria and then acted upon those choices. However, as can be seen from the steps outlined above, they quickly moved on to consolidation processes, having often only spent a very short amount of time orienting themselves within the search before deciding that information sufficiency had been achieved.

Due to the limitations of asking people only about their environmental and recycling information seeking, it is not possible to generalise that this is how these people seek information for other topics. P108 summed up typical internet information seeking behaviour within this study, saying: *"I'd probably start with the council website, after that I'd just Google it."* P90 described a typical internet search as follows:

> "You get however many hits don't you and you then have to look for – sometimes it's easy to see straight away what the official line is going to be and which sites - if I can't tell from the address, then I will go into the actual entry and if it ends in .org then I know it's going to be that. Equally on a .org site you might get a tangential comment and it's not the one that has the information that I need but at least I'm going to those sites. But, if I can't find stuff I will go into the actual entries and see if they provide the kind of information that I'm looking for. There is a lot of trawling through, even when you've self- selected some of the sites."

Trust of internet information was still a factor in the search, with P85 suggesting that she has *"… got very used to cross-referencing as much as possible so I don't take [the information] for granted,"* checking against at least two other sources, which she describes as *"Not necessarily in huge depth."*

5.2.2 Serendipity

Serendipity is when one makes a fortuitous discovery when one was either not expecting to or was not actively seeking that information. According to Foster and Ford (2003) serendipity may be viewed as *"… a purposive or active phenomenon. [and …] has been seen to be of some importance, often considered as a by-product of browsing."* (Foster and Ford, 2003, p. 234)

Several participants discussed having encountered information unexpectedly. In response to being asked what they would do if they found something interesting

whilst not actually looking for that information, P97 said *"I suppose I just store it in my mind. […] Sometimes I just make a little note in my little book, that it's something that I might look at later on. And I can pick it up from that."*, while another participant stated:

> "I think that the internet is almost like a designed by accident, so you find knowledge, so is it accidental, I don't, you know? […] I think the nature of following a link, just means you're often accidentally, you start looking for one thing but find something more interesting and you actually can't even remember what the first thing was, by the end of it, do you know what I mean? That happens a lot." (P107)

P104 suggested that the discovery of serendipitous information was particularly prevalent on the internet, saying *"Especially with the web, because you end up clicking and suddenly you'll go, "… wow, I didn't know that." and it leads to something, yeah."*

While the previous examples are from information encounters while searching for something else on the internet, participants also discussed offline incidents of serendipitous information being encountered. P77 had this to say on the subject:

> "I listen to the radio quite a lot […] I listen to news stations such as Radio 4, and there is often debates, […] you just get bits of it because it's on in the background, […] only last night, they were saying […] that if climate change, the global warming can be reduced in the next ten years by a certain amount, they think the polar bear can be saved although up to now people have said that's the end of polar bears in ten or twenty years' time. That kind of thing must interest me at some level because I definitely remember it. Again I don't actively seek it but I happen to hear it and if I find it interesting it probably stays in my head."

P90 had made unexpected information discoveries whilst going about her day-to-day activities, *"We have found new sources. Again, that wasn't any formal information provision that was just being in and around and we realised that there were a couple here and there."* Another participant was surprised by an unexpected information discovery, saying *"I was quite surprised, unfortunately it's closed now, that there used to be a recycling place at [local refuse centre]. I was quite surprised that they recycled all sorts of things."* (P86)

All these serendipitous information encounters occurred while the participants were not actively seeking the information they found, which is borne out by Pálsdóttir, who stated that *"… information encountering is an integral feature of information seeking behaviour. Information is encountered more often than sought on purpose."* (2010, p. 224). P97 said she would make notes of the information to enable her to return to items of interest at a later stage, possibly straight after the search upon which she was engaged upon, or possibly at a later date. P104 also

mentioned that she was likely to be drawn off on a tangent to pursue the serendipitous information, sometimes, but not always remembering to return to the original search.

5.2.3 Passive Information Seeking

Several participants mentioned receiving information in a passive way, such as being told certain information by another person. This type of information receiving is often part of everyday conversations in which a person is involved, as described by Bates (2002). P98 cited an example of being told about some recycling information by her sister, while P101 explained that her mother had given her (and her sibling) all the information about the new scheme.

Another way in which people receive information passively is via literature sent out by the local authority or other organisations and delivered door to door. When the new waste scheme was being rolled out, the council sent information materials to all households in the area and also placed notices in the local paper to ensure wide coverage of the new scheme was provided.

Several participants (P98, P100 and P104) all discussed growing up and being immersed in an environment and receiving information in this way:

> "I mean, as a teenager, you soak up the environment around you. So you're soaking up what's around you, so I suppose that kind of directs you in some way, because you absorb what you've been given." (P104)

Spender (1996) alludes to this gaining of knowledge without actually having sought it, when he describes tacit knowledge as *"… the kind of knowledge we pick up by "osmosis" when we join a new organization or take up a new activity,"* (pp.68 - 9)

Two participants (P107 and P108) mentioned social media as a way in which they received information in a passive way – while browsing their Facebook or Twitter feeds, they suggested that they often became aware of information or upcoming events about which they would otherwise not have known.

P78, meanwhile, suggested that the radio was an information source which she did not actively seek, but brought information to her none the less, saying *"On the really broad scale, I suppose I get most of my information from the radio, the media shall we say, in particular the radio, radio 4, I guess it's got to be because I listen to that almost all the time."* This echoes P77's contention that having the radio on as a background source of noise causes her to receive information without seeking it.

5.2.4 Information Seeking using Prior Knowledge

Information seeking is usually in response to a specific information need, whether for pleasure or an important life decision. Several participants in this study talked about seeking information when they already had some prior knowledge of the problem, or some idea of where to get the information they required. P86, when discussing how to recycle objects, said:

> "If you've got a good idea of what it was made from I would be able to do that because I've got a background in sciences so I can probably ferret that information out – which I assume most people have, they know what plastics are, otherwise I've got an idea of where they have come from and what they have been made into." (P86)

P89 was researching the purchase of a new vacuum cleaner and said:

> "I had already done some research as to whether I wanted an upright or the other one, a cylinder and they had all the best buys. So I jotted down the ones I was interested in and had made a decision as to what were the important factors for me and then I went on the website of the Ethical Consumer magazine which is like Which? but they review things on ethical grounds. (P89)

Two participants discussed following up an existing piece of their knowledge, by using the internet, with P93 saying *"I have access to the internet, so if in fact I think oooh I can vaguely remember something about that, then I'm fortunate in that I have the opportunity at work, to do it, […] because that is also part of my job."*, while P104 made the following comment:

> "Well, last night, I was looking at the Guardian and it mentioned a Japanese electric car called the hiroku or something, and I thought that looks interesting, so I immediately got on the web and looked it up and it's a plastic car, that when it's parked, the wheels get, it collapses into a smaller space, so it actually takes up a very small footprint on the road. […] It's often like that, you initially just get a mention of something and you think it sounds like it should be interesting, but I haven't got enough information, you just haven't told me enough, you know. And the web's ideal, isn't it, because once you've got a lead."

Another participant gave an example of how she started her web search for environmental information, stating:

> "I mean a lot of times I go to the BBC farm pages, because that's for kind of global issues, things like environmental change, I tend to use Huffington Post (The Daily Caller) and I'm kind of interested in kind of environmental issues in the states, you know, central America. […] I subscribe, to a thing called Atlantic Kitchen which is all about environment issues. [Also,] I use Twitter and Facebook as forums for sharing of information with students and my other work colleagues on the environment related issues. And a kind of web.2 network environment." (P107)

The examples in this section demonstrate that people have specific methods of information seeking when they already have an idea of where to look for the information they currently need.

5.2.5 Information needs

As stated in Section 5.2.4, information seeking is usually in response to a specific information need. Talja (1996, p. 72) quotes Itoga (1992) as saying that *"Information needs are often regarded as the cause of information seeking behaviour."* (p. 341) Talja continues *"It is understood that information needs arise when an individual finds himself in a problem situation, when he or she no longer can manage with the knowledge he or she already possesses."* (1996, p.72) Talja goes on to discuss Kuhlthau's work on uncertainty in information seeking as a process and information seeking cause, suggesting that *"Information is understood as something that the individual necessarily needs in order to cope with problem situations."* (1996, p. 72) Within the context of this study, the interview participants knew when they had information needs and were able to discuss how they satisfied those needs. Many of the participants discussed the information sources they used, and how these differed depending on the immediacy of the information need, which will be covered in Chapter Six.

Seeking information for a specific information need was approached in a slightly different way to just browsing on the internet by some participants. *"It is part of my profession, so maybe I have a, maybe I'm more familiar with that sort of thing. […] I'm quite articulate; I can usually find what I want."* (P93) Although several (P103, P71, P93) said they would begin their search in the same way as they would for general browsing, P83 stated that she would have a think about the topic, decide what information was required and then research those areas, before reappraising what additional information might be required to complete the task.

When asked how easy it was to find information in response to needing it, various strategies were discussed. P99 suggested *"I think it was fairly straight forward, it was like a lot of things in Wales, it was not fantastically organised, but we just asked the neighbours."*, while two other participants said they used the resources provided by the council, with P85 saying she used the council website to obtain a list of items that could be recycled. P78 meanwhile, stated *"I would refer to the leaflets that they have put out to know when they are collecting the stuff or what you are allowed to put in it, you know."*

5.2.5.1 Information needs problems

One participant in particular had one or two issues with information needs. She had only recently moved to Wales from another country and during the interview mentioned several instances when she had needed information from the council pertaining to refuse and recycling collections and was given conflicting advice by the council. Due to their rural location and the narrow road sizes, there are main collections and smaller local collections, which are not advertised on the main leaflets.

> "There seemed to be a bit of conflicting information about it as they didn't seem to know which day the little lorry went up the side roads and all that. The main lorry wouldn't fit up here – it wouldn't be able to turn round, but the little lorry, which days that comes, that's not on the card." (P99)

While the participant had internet access, she said that the council's website seemed to be lacking any information on recycling or collection details, stating *"I mean the internet was only good for getting the telephone numbers, just to get hold of the council. There wasn't any other information there, aside from the number. Not at that time, anyway."* (P99) Although she went on to say that when she got through to a person at the council to clarify the information on refuse and recycling collections, it was unclear *"They gave us some information, but it sort of conflicted with reality!"*

P99 then resorted to asking non-official sources for the required information, to meet her information needs, as did P100, who said that using the council website was *"… not the easiest of things, actually. That might be lacking a tiny bit."* and that she also got the required information from family and friends, most often her mother.

P103 described a college homework exercise, involving her needing to find the meanings of some specific words. She stated that she "…*would like check through several other sites before putting down what we think what the word means, "* using several websites to cross check the information. When asked what she would have done had she been unable to find or double check the meanings, she said *"I think I'd just randomly guess and hope it was the right answer!"*

When faced with an information need, study participants used a range of methods to obtain the information they required. P102 was fairly typical in that she asked people that she felt would know the information, saying that she would *"…ask my brother in law",* as well as looking at other people's actions and behaviour *"We just looked at what our neighbours had done."* (P102) and used the internet, usually via a

search engine such as Google, *"I just type in what I was interested in looking for, you know, on the Google mail"* (P102) All these activities fall within the orientation and opening areas of Foster's model. In cases where there was more time available to meet the information need, participants often described a lengthier process by which the information was obtained, often involving several more steps of information cross-checking and referring to trusted people. One such example was P104, who described the process her household would normally use to consider the purchase of a new refrigerator:

- Internet
- Going to the library
- Looking at the Which? Reports and the buyer's guide and so on
- Visiting local shops and asking the assistant's advice and opinions

She went on to describe how on this occasion, due to other factors, she had taken a short-cut and only used some of their usual methods, deciding to choose a brand with a high energy efficiency rating and just buy it without further research. P104 stated that this was not their household's usual preference; they generally like to take time to consider these types of purchase very carefully. This example shows use of all the aspects of Foster's model interchangeably as different areas of information are explored. This participant's usual information seeking activities flow back and forth through opening, orientation and consolidation stages as different strategies are used in different information seeking environments.

5.2.6 Information Needs Perceptions

This section considers how study participants viewed their own information seeking needs. Typically, the participants did not feel they had any environmental information needs when asked about this, as summarised by P72: *"… so, at the moment, I wouldn't say I have problems with my information needs as regards the, the environment and green issues and recycling."*

Several participants felt there were information gaps, meaning it was not easy to obtain certain information, such as the carbon footprint data on a new appliance. P104 suggested that

> "It would be good if there were places where you could go and get information about, […] the energy costs of things, so when you're making decisions about stuff, like what to get and to buy, and stuff, and what the energy is to produce it and so on. There are big gaps, I think in our, or certainly in my knowledge of stuff, that we need,

so I can see a need for information sources that would do that kind of stuff. […]I can see the need for lots of environmental information that we don't have to hand."

While P100 said *"I'm still not sure that enough is being done to put that information on forums and things."* P107 suggested that it was hard to imagine being unable to get information, saying

> "I think, maybe going back some time, I mean, really, pre- internet, I suppose it was different**,** but I think since the birth of the internet, it's very difficult to imagine you can't find anything out if you don't want to. […] if there's anything you don't know, you've got the option of going online. I can't really think of an example of something which I needed to know about the environment that I couldn't access very quickly, or easily, with the facilities I have, now that I'm in this work. Maybe there will be people generally speaking where it's an issue."

5.3 Information Seeking Habits changes

Battelle (2005) states that *"…search has moved from a useful service on the edge of most Internet users' experience to the de facto interface for computing in the information age."* (p.4)

Raymie Stata (no date, quoted in Battelle, 2005, p.4) states, *"As the amount of information available to us explodes, search has become the user's interface metaphor….There is now all this information that is possible to get into your hands. Search is our attempt to make sense of it."*

As discussed above in Section 5.2, Internet searching is the main information seeking method used by the study participants. Several of the older participants discussed how the internet has improved their access to information. P97 commented that *"I'm very late in learning the computer,"* and went on to discuss how there had been training available to learn how to use computers and the internet which she had enjoyed, while her partner (P98) had not shown any interest in wanting to do the training, feeling that she was just not interested. While P78 summed up these discussions, saying:

> "For some things, perhaps, the internet has changed things greatly because even [if] it is a tiny fact that only concerns six people, with the internet, fortunately, if six people are concerned it means that there is probably something written about it. In the past you would have to rely [on] speaking to somebody about that. So I suppose the need to go to somebody now as an individual is less frequent than it was before Google etc."

P107, from the middle generation in the study participants also voiced this opinion, saying:

> "I think, maybe going back some time, I mean, really, pre- internet, I suppose it was different, but I think since the birth of the internet, it's very difficult to imagine you can't find anything out if you don't want to. […] you just tend to pick up a lot of little

> snippets of information in your day to day life and work, if there's anything you don't know, you've got the option of going online. I can't really think of an example of something which I needed to know about the environment that I couldn't access very quickly, or easily, with the facilities I have."

P107 also commented that her information seeking had changed, due to her perceptions of information having changed from information gathering being for a *"clinical"* purpose, *"about enabling you to get somewhere,"* to a stage where :

> "… it's like knowledge feels just purely for investigating […] I've got what I need in order to be able to do something, and then actually get down to a deeper level of actually what's going on beneath. I'd like to think that as an academic I should always be getting down to that deeper level of knowledge, but I feel more inclined towards that in my everyday life, as it were." (P107)

5.4 Information Use

The way in which people use information will be discussed in this section. There appeared to be some differences in the way in which participants from different generations used information. P79 and P80, for example, only kept information to do with school or college work until any examinations had been taken (and passed), as they considered the information to be irrelevant to them after this.

P78 uses research information to formulate life style strategies, such as recycling decisions. She said that although recycling was something she and her household had always done, now that she was *"…much more aware of it since the research has tended to show how we are using up our resources and causing global change and so on,"* she tried to *"… recycle in other ways and reuse in other ways. By trying to reduce the consumption of new stuff and by passing on reduce other people's consumption of new stuff, therefore, reduce energy use and so on and resources."*

P93 used environmental information she found out by chance about the council's commercial recycling waste collection to streamline her company's recycling processes. She also re-purposes information she receives to pass on to other groups than those for whom the information was originally intended.

P97 used information gathered in a survey of local residents to obtain low energy lightbulbs for all village residents.

One participant cited an example where she had recently taken a piece of information from a newspaper and then gone to the internet to get more in-depth information about the article.

> "The article mentioned something and I wanted more information. […] that's usually how it happens. […] there's lots of things to pick up on. […] I mean, you can

> ring them round and there's things you can look up at a later point. […] On the web, you know. […] It's often like that, you initially just get a mention of something and you think it sounds like it should be interesting, but I haven't got enough information, you just haven't told me enough, you know. And the web's ideal, isn't it, because once you've got a lead…" (P104)

She went on to discuss the fact that she often got frustrated as articles in the media often did not have sufficient information or references to enable a reader to follow up the article if they wanted to find out more in-depth information. She did mention one environmental author from the Guardian who does include references in his material; P92 concurred with this view, citing a different author in the Telegraph.

P107 considered the idea of information as an opportunity, suggesting that there is

> "…an element of what that [information] could mean to you, in transforming your life, with new opportunities, so maybe I'm over exaggerating that slightly, but that illustrates my point about the nature, the way which information comes to us timely."

P108 discussed how she uses a comparison website to do most of her household research online. She starts her search from a specific website which she trusts and then follows links from this website to obtain additional material until she has satisfied herself that she has as much information as she can about the subject she's researching. Other participants, including P104 and P107 described similar processes when using information from the internet.

5.5 Information Dissemination and Information Sharing

Dissemination is defined by the OED as *"To spread abroad, diffuse, promulgate (opinions, statements, knowledge, etc.)."* and by Oxford Dictionaries as *"Spread (something, especially information) widely"* (both OUP, 2015). In the context of information dissemination, however, these definitions are somewhat lacking. Within information science, dissemination can more accurately be defined as the passing of information to other parties using a diverse set of methods. These would include both digital and analogue formats, as well as person to person contacts.

Information sharing is a more reciprocal activity, with at least two parties exchanging information, usually in the course of a discussion.

5.5.1 Information Dissemination

P89, who, along with her partner, is very enthusiastic about environmental issues, stated that her partner's mother often tells her if she has seen a new recycling point

or a centre where new or additional materials can now be recycled. *"It was her that told us that you could now recycle the cartons at the Co-op. […] She had seen them [...] and she told us about them because she knew that we would want to recycle them."* P89 also mentioned that her partner has a nature/environmental blog, on which new environmental information is disseminated. P89 also has friends and colleagues with whom she discusses, shares and receives information in a more informal way.

P100 discussed that she felt people were generally unaware of certain environmental and recycling issues and that forums were a good way to raise people's awareness, but that said *"I'm still not sure that enough is being done to put that information on forums and things."* When asked what she thought could or should be done to raise awareness, she responded that television advice is quite a strong influence. She went on to discuss how she always looks at leaflets and literature that comes through her letterbox before discarding it to the recycling, but that she knows several people who just throw it straight away. P100 puts this down to her upbringing, during which a strong sense of reusing and recycling was instilled in her by her parents.

Both P100 and P93 disseminate information on recycling at their places of work. P100 said that she has on occasion sent out reminder emails if she has seen colleagues use an incorrect bin. P93 is in a more senior position within her workplace than P100, and is able to direct the recycling policy within the building in which she works. She has prepared and displayed posters explaining how and what to recycle, as well as the organisational costs and implications. Within her organisation, there are recycling initiatives, but as the organisation has several dispersed operational locations, P93 feels that her own site and building are not as involved in these processes as they could be. As a result, she says that she *"… will spend my efforts influencing the bit that I can. [and that…] recycling does not appear to be high on the agenda"* for her organisation. Because P93 is in a position to influence colleagues, she has raised awareness of recycling within the company, partly by her actions and partly by dissemination of the information. P93 also helps others within her organisation to access information. She creates information packets for specific target groups which are then made available via the company's intranet system. P93 is aware that information needs to be audience specific, even if it is re-purposed from the original intent:

> "If we have something given to us as members of staff it's written very clearly for us as members of staff and therefore if you want to tell one of our visitors about it, you have to reinterpret it yourself. It just makes the transfer of information easier and if you can make one bit of effort do more than one thing…"

P85 stated that she would disseminate information with her children, to try to influence their recycling and consumption habits, but not usually other people. She has two children, both live in cities and while one is conscious of the environment and walks or cycles and uses local, fresh produce where possible, trying to live sustainably, the other uses a car, and lives a consumer lifestyle and does not seem to be worried about the impact of this lifestyle. P85 notes that both were brought up in the same way, so *"… that's just the way that they are."* She went on to say *"I think it is very difficult to really educate people without having something very draconian or really drastic to get them to change their minds."* She then discussed a TV programme in which a family agreed to spend a week living in a woodland cabin, with no electricity and having to bring their own water from a well. By the end of the week, the family realised what sustainable living actually meant and made changes to their lifestyle on their return home, including buying bicycles and getting rid of one of the family cars. P85 expressed her opinion that education was required, but in order to really make people aware of the costs of their actions, they needed to experience a lifestyle without modern technology for a short while:

> "I think more than growing things, that's quite slow, growing things, really, I think they need more like the shock of having to do without and seeing that life doesn't end. And seeing there are alternative ways […] It's only by making people physically experience [this] that they realise how much they are wasting."

P85 felt strongly that people are often unaware of the processes behind for example, the easy availability of hot running water and that educating people about these processes and the impact of how wasteful their own lifestyles are to the available resources could be a useful thing to do.

P107 discussed the kind of internet sites which disseminate information on environmental issues, such as the Huffington Post Daily Caller, Atlantic Kitchen and BBC farming web pages and that these websites all tend to have links to one another and often P107's contacts may also have linked to these pages via shared social media groups. *"So it's not really about going to a site and finding information, because of course the information is actually connected with one another which is quite helpful."*

P107 has also recently been creating video clips on YouTube and suggests *"I think the amount of information and the way in which you can package it, and present it, you know, I think, you shouldn't underestimate the significance of the clip."* She feels this is an excellent way to disseminate information to a wide audience as it is easily accessible to the majority of people via the internet and modern communication technologies.

5.5.2 Information Sharing

P108 uses Facebook as an information sharing platform. She is a member of several local groups, on one of which she recently saw a post requesting information on how to recycle a large household appliance. Although she knew about the council's collection scheme for large items, by the time she saw the post, another member had posted the information and the contact details. P108 said that she would have shared her knowledge on the group, had it not already been done. She also said that she would use this group herself to seek local information, *"Because there's usually somebody somewhere that's had the problem before."* P107 also mentioned sharing information on Facebook, in connection both with environmental lobbies and social events, as well as with students and colleagues within the local university, saying *"I use Twitter and Facebook as forums for sharing of information with students and my other work colleagues on the environment related issues."*

P97 discussed having been involved in producing a village profile (which was passed on to various local repositories) and that as part of that production process the group obtained information via a survey about household electric usage. This information enabled the village group to forecast electricity usage and they then sent a request to the main electricity supplier for energy saving bulbs, as

> "I put to them that we could save, I think it was 2.5% if they helped us buy some low energy bulbs and so everybody in the village had four low powered electric light bulbs."

P107 shares information via internet media such as Facebook and Twitter. She views these media as *"… a network of friends and acquaintances you build up, […] especially with Twitter because it's all work colleagues."* P107 summed up these thoughts, saying:

> "… now we're in the information age. […] we're in a world that is dominated by the sharing and re-codification of knowledge. […] I mean there's a doctrine there which is amazing of actually being able to relate your knowledge to what other people are finding out, and I'm beginning to believe that significant scientific discovery, as well as social empowerment are going to be the products of this sharing of information."

She also considers that *"… there's a difference between knowledge that you are given and knowledge that you give,"* going on to discuss that she enjoys being at the forefront of established knowledge, that there is kudos in *"… being ahead of the curve, perhaps, you know, there's like fashionability to knowledge, isn't there?"* She stated that she enjoyed finding out new things and being able to share them with her colleagues first, before anyone else. She went on to describe this as being more exciting than knowing or sharing an established piece of knowledge, even though such knowledge still has value:

> "An established piece of knowledge, […] it's not that I would ignore it, but I wouldn't be anywhere near as excited about it as if I had found a new piece of knowledge. Whereas if you're at the cutting edge and you almost don't know what this knowledge might mean, it's quite exciting to share it."

P107 had just discussed how Google's algorithms may make social networking more socially relevant as many of these systems such as Facebook and Google are linked and the search data is collated across the sites. While she felt that this may enable people to get more out of their social networking, she also felt slightly dubious about this higher level information sharing. She mentioned that her own Facebook pages and Twitter feed were self-authored, so she knew the sources and the relevance of the information she was sharing. However, she was aware that the information may generate advertisements which would appear alongside that feed over which she did not have any control, and whilst some of these advertisements could be relevant, she was unsure if it was a good thing to be associated with potentially unknown products, although the sharing of interesting information was a good thing. P107 went on to consider this in terms of surveillance and the ethos of George Orwell's novel "nineteen eighty-four." She was concerned that an element of control was being placed by the corporate, profit-making parts of the internet on what people get to see. P107 discussed that what she felt "nineteen eighty-four" is actually exploring is

> "What people *can* think, actually. I mean, my favourite quote from 1984 is *"Those who control the present control the past. Those that control the past control the future."* It's that idea that if you control what people know and what they think, you can control the world and the point about the internet is that you know, on one level, it is partly about, I suppose, people controlling knowledge and what people can and can't know. But I think the overwhelming thing when it comes to social networking is people actually not being able to control what you can and can't know or share, and you know, I think actually, I feel it's a profoundly and predominantly a power thing."

P107 was reassured that it did not appear that this power was being used in this way, although she did feel that it was possibly having an effect in the way people now used search engines, such as Google. *"But I think it's partly about people effectively shaping the knowledge agenda by maybe having it imposed upon them."*

In an offline context, P85 stated that she shared information with people if it came up in discussion, but not otherwise, as she was afraid of being seen to be preaching her views at people." *It's very difficult to teach people in an urban environment and if you say anything about it they just put up the shutters and I think you just have to show them rather than preach. So yes, I'll discuss it if it comes up."*

P75 said something similar, in that she would not volunteer information unless she was asked:

> "Yes, I definitely pass the information on to people. I don't think they'd ask questions specifically, but if it came up in a topic of conversation then I would let them know what I think, give them my knowledge or, you know, find out what they would do, like. We talk about it a bit in work, because a lot of people that I work with come from Mach, or you know, around that area, so it's Powys and Gwynedd, more than Ceredigion and they've got different recycling. So we talk in work about what we get and what they've got."

P100 also mentioned her fear of being seen as preaching – while she said she would mention it if she saw a person putting something recyclable in a landfill bin, she also said she did not want to fall out with people over recycling, but that *"I'm always surprised when people don't* [recycle]*, because with the kerbside, it's not really like a massive chunk of work, is it?"*

5.6 Summary

This chapter has considered the ways in which people seek information, looking at information seeking habits and the themes which arise from these habits. As stated in the previous chapter, people use a variety of sources of information. Most have a preference, often dictated by ease of access or habit. In this study, it was found that the participant's first choice of information source was the internet, possibly because the participants within this study all had access to the internet and used this as a regular source of information, creating a habit of using the internet.

This study found that the second choice of information source was contact with a person. Bronstein (2007) found that when information seeking, people consider how much they trust the information channel, which demonstrates that the choice of people as information sources has more to do with trust and expectation that the

person in question will know the information required and will be correct, than it has to do with ease of access to that person. The researcher found that several of the participants would contact a person who was not immediately local or available to speak with on a face-to-face basis via a variety of methods from telephone to asynchronous messaging if they considered that person would have the necessary information.

People use a variety of different methods to obtain information, both directly and passively. However, as previously stated, most people have a preferred way to do this, which becomes habitual, with participants often using the same sources and information seeking behaviours whenever they encounter an information need.

As discussed in Chapter Four, nearly all the participants were aware of a need to check internet derived information for veracity, even if it was only by using a different website. The participants all described browsing behaviour starting with a key word or phrase search in an internet search engine, followed by considering the results listed. A definite pattern of search activity emerged from the interviews, which was described in Section 5.2.1. The steps outlined were broadly followed by all the participants who used the internet to search for information.

Due to the different research settings, certain of the information seeking behaviours prevalent in Foster's model, such as breadth exploration, chaining and monitoring were not evident in the information seeking activities of the research participants in this study. Key word searching and eclecticism, however, were evident in the participants' search activities.

During the interviews, participants discussed that they just chose a single word to enter into an internet search engine as a starting point and then broadened their search dependant on the returned results, often just by picking results they thought looked as if the information they sought might be included. These actions fit within the core process of opening in Foster's model, as the participants chose their search criteria, however, as can be seen from the steps outlined in Section 5.2.1, they quickly moved on to consolidation processes, having often only spent a very short amount of time orienting themselves within the search before deciding that information sufficiency had been achieved. All these activities fall within the orientation and opening areas of Foster's model. In some cases, the participants felt it was worth their while to engage in a lengthier process of information seeking, often involving several more steps of information cross-checking and referring to trusted

people, moving into consolidation process activities, moving back and forth between searching and cross checking, demonstrating the fluidity of actions within the model, as different strategies are used in different information seeking environments.

A generational difference occurred in that the older generation often looked at nearly all the results in turn, often continuing to do so for several pages of results, while the younger generation often only looked at the first page, sometimes only the top few results.

Several participants mentioned discovering information by accident either when not seeking it or receiving information in a passive way, such as being told certain information by another person. This type of information receiving is often part of everyday conversations in which a person is involved. Other ways in which people receive information passively are via social media and via literature sent by the local authority or other organisations and delivered door to door.

Seeking information for a specific information need was approached in a slightly different way to just browsing on the internet by some participants. Although several (P103, P71, P93) said they would begin their search in the same way as they would for general browsing, P83 stated that she would have a think about the topic, decide what information was required and then research those areas, before reappraising what additional information might be required to complete the task.

Typically, the participants did not feel they had any environmental information needs when asked about this, but when faced with an information need, study participants used a range of methods to obtain the information they required. P102 was fairly typical in that she asked people that she felt would know the information, looked at other people's actions and behaviour and used the internet, usually via a search engine such as Google. In cases where there was more time available to meet the information need, participants often described a lengthier process by which the information was obtained, often involving several more steps of information cross-checking and referring to trusted people.

Some participants disseminate information on recycling at their places of work, both in person and via electronic messaging. While some participants use Facebook and Twitter as information sharing platforms, to share and disseminate information in connection both with environmental lobbies and social events, as well as with students and colleagues within the local university.

Foster and Urquhart (2012) suggest that *"… information behaviour is scalable, and that different groups do more of some behaviour, and less of others, while still fitting an overall model of behaviour."* (p. 801) This was borne out by the findings of this study.

Chapter Six: Results and Analysis - Influences on Information Seeking

Many factors influence information seeking from the nature of the immediate information need to the way in which one wishes to obtain the information. As Attfield, Blandford and Dowell (2003) suggest *"Information seeking does not occur in a vacuum but invariably is motivated by some wider task."* This chapter will consider some of the ways in which information seeking is influenced by other people and the ways in which the study participants influenced other people's information seeking due to their relationships with those people. The family and social network relationships between people can also influence information seeking.

The chapter will also consider the ways in which environmental factors influence information seeking as well as the new notion of Disposable Information and Disposable Information Seeking.

6.1 Influenced

This code considered what influenced the information seeking of the study participants. Foster's 2004 model suggests that there are many factors that influence information seeking, including both internal and external context as well as a person's cognitive approach.

His revised model reorganises these factors, with them becoming intrinsic and extrinsic context. These now combine cognitive approach and intrinsic context, with Foster and Urquhart stating that *"This new category represents a group of variables expressing aspects of ways of thinking, experiencing, and interacting with information problems."* (2012, p.798) The new variables are broader than those in the original model, becoming Personality and Learning, Knowledge, Affect, and Motivation, although they still cover the same areas, with the addition of motivation, which was assumed to be present in information seeking in the original model. Foster and Urquhart go on to say that *"Extrinsic context as an element of the model emphasises that an information seeker is not isolated from the multiple factors surrounding their information seeking."* (2012, p. 799)

Many people were influenced – either directly or indirectly by family members. P101 admitted that while she would not ask her younger sibling for advice or information on anything, if her sibling offered advice or information, she was likely to listen and be influenced by it, although she would never tell them that was the case.

Several participants mentioned that they have a person or persons to whom they go when they have an information need – they may be a family member or just a trusted person whose advice and information has previously been useful. P86 grows vegetables for family use and says *"… there is one person who I haven't had recent contact with that I haven't mentioned, who I rely on, simply because he was a commercial grower."* This person is not local and P86 has to make a special effort to contact him if information is required. P78 echoed these sentiments, saying

> "Going back to specific people influencing me, I suppose I am susceptible to that. […] I am influenced by individuals, for instance, I can't think of any names in particular but I mentioned my [child] as somebody I know personally. […] I am susceptible to people who I trust and what they are saying and doing and the people that I do generally trust tend to be people who are concerned about the environment and who tend to recycle, reduce etc."

6.1.1 Relationships, Trust and Influence

The relationships between people can have an influence on their information seeking. If a trusted person tells you that a certain website is not reliable, for example, you are likely to believe them and thus not use that website without other checks on the reliability of the information.

In this study, the relationships between the participants were noted to identify any influence on information seeking behaviours. These relationships are represented as five separate clusters of relationships and are depicted below as Figure 6.1 and for additional clarity as figures in Appendix Ten.

Some participants had several sets of relationships including some with more than one relationship with another participant. Examples of this are where two participants are a parent and child or are partners and colleagues. The types of relationship are listed below.

- Parent
- Child
- Parent-child
- Sibling
- Partner
- Friend
- Colleague
- Former colleague

Each cluster contains all the participants who had a relationship with anyone in that cluster. Some of the participant groups had connections to more than one group, which is shown in Cluster A. The individual clusters are each shown in separate figures in Appendix Ten for additional clarity and to show the relationships in more detail. The individual clusters are labelled according to the number of participants and relationships within the cluster, with Cluster A being the largest and Cluster E

being the smallest. In the figures, circles represent individual participants within the study; lines show to whom they have a relationship, with directional arrows where appropriate; and the diamonds show the type of relationship.

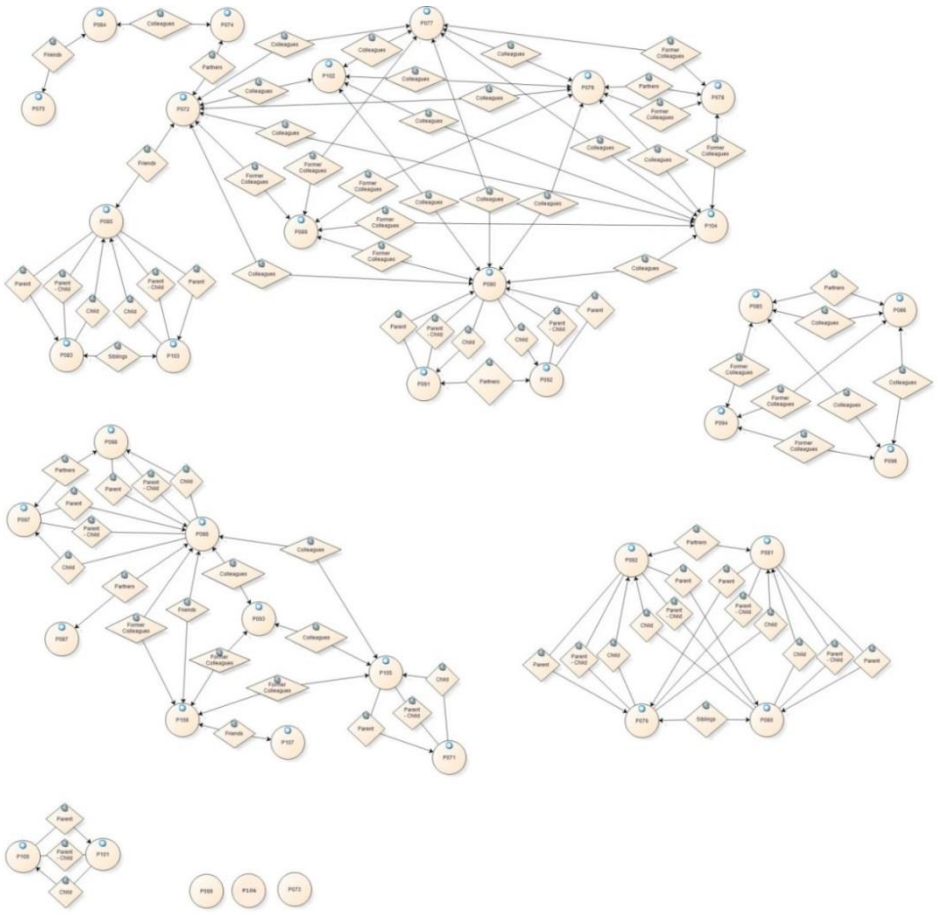


Figure 6.1: All relationships between study participants

6.1.1.1 Trust of relationships

Two participants, P104 and P108, do all their household purchasing research on the internet. Both have a trust in the internet as an information source, supported by their partners. P104 as in their opinion it is the most up to date source of information and is the most ecologically sound and P108 as it is an easy resource to use – all the information is available in one place. P108 in particular uses websites that have provided valuable information in the past and are thus trusted websites, often starting from a specific point and using links from this webpage. P108 placed sufficient trust in this website to make household environmental decisions based on the advice on the pages:

> "And we also took their recommendation that while our loft insulation wasn't current standard, that we had sufficient […] and they said in this type of house, with the cavity walls done and the amount of insulation we had, we probably didn't need it."

P107 discussed trusting information from the internet if she knew, or knew about the author of the webpage, particularly on social media. P78 said she was influenced by the radio

> "I like to think that by listening to Radio 4, including certain science programmes, I like to think that I am getting an impartial digest of the available research […] There must be people who I hear on radio who I respect more than somebody else and I would tend to be convinced by them which are in a way opening myself to biased information."

6.1.2 Influenced by family

P71 said that she is influenced by her family – specifically her parent and her grandmother, both of whom she had recently asked for help when searching for information. P71 stated that she asked these two family members as *"If they don't know, they'll help me find it."* She went on to elaborate that both will help if *"the search needs tweaking a bit,"* and that their advice influences her ongoing information searching.

All the participants mentioned that they had been influenced at one time or another by a family member. The following list indicates the family members who have had an influence:

- Parent
- Grandparent
- Sibling
- Partner
- Child
- Parent in law

P83, P101 and P103 all said that their parents influence them about recycling and environmental issues. P89 is influenced by her mother in law, who is knowledgeable on green issues and passes on information about the environment and recycling in which she knows P89 and her partner will be interested.

Several participants discussed the fact that their partner influences them, although all the participants with life partners also felt that they influenced their partners equally as much. P104 summed up this sentiment, saying *"I think we influence each other a lot, one way or the other, you know."* The list below shows which participants are partners of others:

- P72 and P74
- P76 and P78
- P81 and P82
- P85 and P86
- P87 and P88
- P91 and P92
- P97 and P98

Eight of the participants (P77, P85, P86, P87, P88, P97, P98 and P100), described feeling that their upbringings had influenced them to want to recycle. All but one of these (P100) participants were from Generation 1, several of them mentioned post war austerity having had an effect on their childhoods. P98 said

> "Yes we have always been brought up not to waste anything. We've always been happy to get any further use out of things such as household items, clothing, never wasted food. So, it's been instilled in upbringing and over the years, to not waste, whatever it happens to be. Heat, gas, electricity, and so on, so it's, we've been brought up with it." (P98)

P104 also summed this feeling up, stating

> "I mean, as a teenager, you soak up the environment around you. So you're soaking up what's around you, so I suppose that kind of directs you in some way, because you absorb what you've been given." (P104)

P100, the exception above, who was from Generation 2, said that her mother was from the post war generation and had instilled certain values about waste in her from an early age. In turn, P100 worried that her children did not understand the concept of reusing or mending items - she was concerned a little about them being part of what she described as the *"replace it generation."* P100 illustrated this with a comment about how her daughter thinks it the norm to purchase cheap clothing from a chain store and possibly only wear the items a few times before throwing them away. She then mentioned that her father would be shocked by this and P100 went on to discuss that her father had recently attended an interview and on learning of the interview, rather than purchase a new outfit, *"... he went straight down the charity shop to get himself a suit."*

P92 and her household have discussions about the rubbish and recycling and all have a say in the process and where to place the relevant bins, etc. The household is happy with the new waste scheme.

P96 has a primary school aged child who has been learning about recycling and the environment at school. As a result of this, P96 and her partner are trying to increase their household recycling to encourage this attitude in their child. P73, P76 and P78 all have children of a similar age and concurred with these views, P73 mentioning that if she was *"… a bit lazy"* with the recycling, one of her children would pick her up on it and encourage her to recycle properly.

A pattern emerged from identifying the information source preferences of the study participants – all but one of the participants whose parent or parents were also interviewed showed the same first choice of information source as one or both parents. The exception to this was P90, whose first choice is the internet for

information seeking, while her parents prefer to use people or documents. It should also be noted that those participants whose preference was not the same as that of both parents, were more influenced by their mother's information sources than their father's choices. Possible reasons for this finding are that more female participants were interviewed, and that the fathers of P71, P83, P101 and P103 were not interviewed.

6.1.3 Influenced by friends or colleagues

Participants all discussed various influences on their lives and information seeking behaviours. P78 and P102 both mentioned talking to friends that they trusted and were knowledgeable in the areas they would ask them about.

> "Somebody might recommend something to you or tell you something, then you go and get it confirmed perhaps from an official source. It's a bit like the recycling, you know, I might have asked somebody something and then looked it up on the Council website to get some more details." (P78)

P77 discussed how she talked to her son about being more conscious of his energy usage, encouraging him to switch off lights and appliances when he was no longer using them. She said, however, that the influence of his peers has been greater, with one of his close friends being very ecologically aware and having made him realise the effects of not switching off electrical items, causing him to modify his actions.

P84 talked about how colleagues would come into work with ideas to decrease the environmental impact of the work her department does and how these ideas would be considered for cost effectiveness and implemented where possible.

6.1.4 Influenced by environmental factors

Agosto and Hughes-Hassell (2005) found that some of their participants used sources such as product packaging to gain everyday life information. In this study, people used packaging to discover if an item was potentially recyclable, as well as for everyday life information, although one participant (P84) discovered that a particular brand of chocolates had compostable and recyclable wrappers and decided that in future, those were the brand the household would purchase until other brands were also as environmentally conscious. P84 mentioned that her household are keen recyclers and consider the packaging on all their purchases, especially food, actively seeking information about recycling on the packaging. P84 buys a particular brand of orange juice, despite it being in a tetra pack, which they normally do not purchase, as the household prefers the taste of this brand.

> "We would look at things that are recyclable as opposed to not. So we wouldn't go down the avenue of, again, we do buy tetra packs of orange juice because of preferred flavour. We don't buy that sort of packaging normally, but we prefer that taste. But things like eggs we would definitely buy in a cardboard box as opposed to a polystyrene box, [Yes, because the cardboard is compostable?] Yes, exactly, so there is influence there. Also, nowadays a lot of things are recyclable and what I have noticed in the supermarkets is that packaging has been reduced. More packaging is more recyclable with information on what is recyclable and what's non-recyclable, so I've got the information there in front of me, and as a keen recycler I know what is accepted in the recycle bag and food waste, so I'm influenced that way."

P84 goes on to describe how electrical purchases are influenced by energy efficiency and cost, having conducted internet research and asked the advice of family members on these issues prior to visiting a retailer to make the purchase.

P104 needed to purchase a new 'fridge as her current one had broken down. Her usual approach to this type of purchase was to do internet and library research into the most energy efficient models, then consider price and local availability, then visit a local retailer to make a decision and actually make the purchase. In the example P104 described, she just wanted a new fridge quickly, so went for an information shortcut using a trusted brand that she and her partner had purchased previously.

> "I just thought if we do our usual process, […] it would just take us so long, and I just wanted the bloody 'fridge to be replaced. […] In the end [partner] went for the brand, which was a high energy efficiency rating. So, I mean, you use all these short hands, don't you? Whether it's rubbish or not. I don't believe in brands at all."

P74 said that she had been *"… quite heavily influenced by CAT in the last couple of years […], as a source of information they are highly recommended."*

One participant has been influenced by the new waste programme both in Ceredigion and in her workplace. P75 is finding the new kerbside scheme more convenient, which is in turn making her more aware of recycling. She also suggested that her workplace's new initiatives, which included providing additional bins in certain areas of the workplace, whilst removing others, to encourage people to use the appropriate bins are *"habit forming"* and are influencing her recycling behaviours.

P94 has been influenced by a previous job working in a recycling centre and is aware of what items are and are not recyclable. She is somewhat sceptical about certain items that the council scheme does not accept, as she knows these are potentially recyclable, but considers that the council does not accept them as there would be a cost involved in processing these materials.

6.2 Influencing Others

Several of the study participants, particularly those who are parents, felt that they influenced their household members, especially their children, in how to obtain information about recycling and environmental issues, as well as in their actual recycling behaviour.

When it came to influencing friends and colleagues, however, the participants felt it was more complex, as they did not want to be preaching, but in some cases still felt strongly enough to want to share their opinions and hopefully influence their peers.

6.2.1 Influencing family

P82 (the parent of P79 and P80 and P81's partner) felt that she did have some influence over the household decisions about recycling, that her partner and children took notice of her and her views. P78 shared this view, suggesting that her family were aware of her environmental opinions and that as these were based on science and fact, she felt her family was influenced because *"… when I say something or do something by example, in a way they know it makes sense, not because I'm doing but because it chimes with what they're hearing from elsewhere."* P107 echoed this opinion, although her child is much younger, stating that she had

> "… created a little vegetable patch for her in our garden, in the long term is to help her find out where food comes from and how it's produced. I think that could be a platform … I'm a big believer in like practical knowledge, rather than just giving her information."

P106 felt satisfied that she had an influence on her child when she realised that she no longer threw away recyclable materials, but left them on the worktop to be rinsed out for the recycling bag. One participant's child lives in an urban area outside Ceredigion. When P93 visits, she teases her into recycling and making more conscientious decisions.

> "Teasing her about it is a good way because I am not telling her to do something I don't do at home. And I think the important thing is, if you want someone to do it, it is not just what you tell them it's what you do that's important."

P72 said that due to the rural area, she had to consider journeys and could not *"just pop to Ikea,"* which in turn has caused her to really think about her lifestyle. She added that she and her partner

> "… try and live a lighter, lighter impact life. […] and, through it, we've influenced other people in the family, umm, into, just little things, like, not leaving stuff on standby overnight, and you know, try, we still haven't managed to convince our in-

> laws to not throw away masses of food at the end of every week, but you can't you know, do everything."

P89 said that she has persuaded her mother in law to use her car less in a similar way, as *"Sometimes it's easier to influence just by quietly doing."*

P87 felt that she had influence over her partner in respect of the food waste, as not all of it needed to be composted. Some was suitable for feeding to wild birds etc., and only actual leftover food needed to go into the food waste bin. She also felt that she influenced her child, as when toys break the child brings them to her to see if they can be mended. P87 then shows her child how to do the repairs, *as "Learning by repetition is always a good thing."* Her partner (P88) will also bring broken household items to see whether they are repairable before making a decision on whether to throw the item away.

6.2.2 Influencing friends or colleagues

Several participants discussed ways in which they felt they influenced their friends or colleagues on recycling or environmental issues. P98 said that if she was visiting a friend and saw the friend putting recycling items into the household waste, she would make comments such as *"Have you run out of recycling bags?" "Would you like me to bring you some over? I've got plenty." "You know how much it puts on our rates if we don't, and if we have to landfill."* She went on to say *"And sometimes there's a muttering, or, no, no, I've got some somewhere, I'll look them out, you know? Just a little reminder, I think is good."* P98 felt that a gentle nudge from a peer was a good way to encourage a friend to recycle.

P89's partner runs an online nature blog, on which information that P89 finds is also hosted. P89 suggested that she was more likely to disseminate information to her friends this way rather than influence them directly, unless they specifically asked her a question on a green or environmental issue.

One participant discussed influencing her colleagues by sharing knowledge and resources when she comes across information of interest. She also commented on the concept of information being used for power, referring to the novel "nineteen eighty-four" and then going on to describe her views about the internet and how people disseminate information in order to wield or share power, particularly on social media.

> "It's that idea that if you control what people know and what they think, you can control the world. […] It is partly about, I suppose, people controlling knowledge and

> what people can and can't know. But I think the overwhelming thing when it comes to social networking is people actually not being able to control what you can and can't know or share." (P107)

P74 discussed that in her job, she had to *"… do things in terms of impacts"* in order to influence her bosses. By this she meant that she often had to reduce a long report into a single A4 page of bullet points showing the actions required and the impacts these actions would have if implemented, which was simplistic and often caused problems later. P74 said that without wishing to be arrogant, she liked to think she had influenced her colleagues, although she felt that she was as influenced by them as they were by her.

> "There are people in the [name] team who will encourage you to sit down around the table and ask what are you doing, what are you working on? And exchange ideas, views, information sources."

Because of the work P84 does, she is in a position to influence some policy decisions within the council, which has had benefits within the new waste scheme.

Another participant stated that at work, she was able to influence her colleagues, although she could not actually enforce her views on recycling:

> "Within the area over which I have jurisdiction and within the areas adjacent to my jurisdiction where I feel I can actually influence my colleagues by example. Even though I can't actually tell them, you must do this. […]And even though I may suggest to my colleagues and things, I don't want to be a bore about the subject. Erm, but the best way is to lead by example." (P93)

P100 also tries to influence and encourage her workmates to recycle more:

> "We've pushed it a bit in work a bit too, that's quite good, because people don't always think about the environment. So, I sometimes send out a reminder email to let people know that someone's put something in the wrong bin!"

6.3 Disposable Information

The content of this section is based upon a journal article which was published in *Library Review* in 2015.[3]

This study was concerned with information about recycling and the environment and as such most of the information seeking participants shared was not of major importance in the everyday scheme of the participant's lives. If they recycled an item into the wrong bin it was not going to have any major repercussions on anyone. As a result, much of the information seeking discussed was for information that may be considered "Disposable information."

[3] (Mawby, Foster and Ellis, 2015.)

One of the findings of this research is that the notion of a new type of information has emerged – Disposable Information. A new type of information seeking behaviour is also suggested here for Disposable Information – Disposable Information Seeking. Disposable Information is task specific and likely to only be required by an individual on a one off basis, causing different ELIS patterns to emerge. Ultimately, people are only prepared to expend effort to get quality information if they perceive a value or further, continued use for that information.

For the purposes of this study, quality information is that which has been checked by the seeker against various criteria and safeguards. These would normally include cross checking for similar or same answers from more than one source, checking the validity or authorship of the information and that it is relevant to the search query.

These notions are borne out by considering Chang's 2005 work on browsing, wherein an information seeker has a set goal in mind when commencing browsing. For the purposes of this comparison, the browsing would be considered under the first of Chang's general browsing themes, "looking for a specific item." (2005, p. 71) This situational or opportunistic browsing identifies and evaluates potential items of interest on the topic they are investigating, but an information seeker will only browse or read an information source for as long as it continues *"… to hold the browser's interest."* (p. 73)

A variety of themes emerged from coding the interview transcripts, which were fully discussed in Chapter Three. The notion of Disposable Information emerged as a result of analysing the data from the transcripts.

Disposable Information is exactly what it sounds like – information that is used once and then discarded.

Information in the context of this study and the notion of Disposable Information was linked to recycling information seeking and could be considered of little or no value once the immediate information need of identifying whether a particular item could be recycled was satisfied. While a fact once known cannot then be unknown by a person, it is possible to forget intentionally or otherwise if there is no perceived value attached to retaining the information.

Disposable Information Seeking Behaviour involves making a judgement about what information is actually needed to satisfy the information need. This fits within Foster's model as part of the core processes of orientation and consolidation,

although it also involves networking which sits within the opening process of the model.

The list below shows the range of sources the interview participants named when asked what information sources they used to obtain information. The list does not include the various people that the participants mentioned, which included, but were not limited to, a variety of household members, non-immediate family members, friends, colleagues, neighbours and a range of professionals. Williamson (2005) suggests that *"There is also a need to include information sources such as family, friends, and colleagues, […] who play a significant role in […] information acquisition."* (p. 130)

- Named websites:
    - Council / Ceredigion website; Google; Freecycle; WRAP; various BBC Websites; Wikipedia; Busbro; Atlantic Kitchen; Huffington Post – Daily Caller; Facebook / Twitter; MoneySavingExpert.com; Bing.
- Unspecified websites:
    - "one of the Aberystwyth sites"; "I use the web a lot."; "The internet, obviously."; Forums – several mentioned, but none specifically named
- Magazine articles
- Books
- Packaging
- Information literature provided by the council at the start of the new scheme, including leaflets and the recycling bags
- Newspapers:
    - The Telegraph; Cambrian News; The Guardian; Wired Magazine; (Christopher Booker – in The Telegraph; George Monbiot, who writes for the Guardian on environmental issues.)

Several of the participants said that they used material from the council, which they had in convenient spots in their homes, such as notice boards, fridge doors and garage walls to check the suitability of items for recycling. The following description is typical of this behaviour:

> "The leaflets that they give you are actually very explanatory, and I happen to have one, because I'm a bit organised, stuck on blu-tack, on my garage wall, so if in fact I suddenly think ooh, should I put that in there, then I can consult that." (P93)

This behaviour demonstrated the Principle of Least Effort (PLE), which was discussed in Section 2.9, in that the participants knew that the information they needed was likely to be included in the documents without having to try too hard to find it. P81, for example, said she would look *"First on the leaflet. If it's not on the leaflet, tend to just put it in the household bin. I wouldn't know where to go to get the information."*

The following comments about online information sources from P71 and P108 respectively suggested they would both use a minimum of effort to obtain recycling and environmental information, with P71 using search engines:

> "Google and Bing. […] I just follow the first one [link] as long as it's not Wikipedia. If it's something that I needed to find out and it made sense in my head, then I'd use that. I wouldn't look any further."

P108 suggested she would use social media: *"Yes, I probably would [use a Facebook group] because there's usually somebody somewhere that's had the problem before."*

Evident in the results is that some people consider themselves inherently lazy. In this study, 12 of the 38 participants (32%) considered themselves too lazy to make the effort to find recycling information to enable them to actually carry out the recycling. As P83 stated, when asked how much effort they would put in to getting information and then acting upon that information: *'I think it depends on how lazy I feel. And it depends on whether I can be bothered or not.'* P101 expressed similar views, reiterating that she would only make a minimum effort of asking her mother, before placing the item in the general refuse (black bag), if her mother was not available to be asked, while P108 explained that they would look on Facebook for recycling information, *'Because there's usually somebody somewhere that's had the problem before.'* P90 continued this least effort theme, in that the information was similar enough to not need to check too closely.

> "I think now we have got to a point – sounds awful, but your rubbish is quite repetitive – the bulk of it, so once you have come across the sorts of things that you use in your house regularly, you know which bin they go in." (P90)

Another finding of this study was that people place different values on information based upon their expectations of its future use to them. P79 and P80, a pair of siblings who were both in college at the time of their interview discussed the fact that often they only needed information in order to complete a piece of coursework or for examination revision.

P80:	*"I'd keep it, like with the information I got for my homework, I kept it in a file."*
P79:	*Then you can go back over it if you need it."*
P80:	*"Yes. The information I got for my IT homework I referred back to it in the class."*

Both participants said that after an exam, they usually disposed of the notes from that subject.

When referring to the information on how to actually recycle, P81 (the parent of P79 and P80,) stated that one of the household's teenagers had been given responsibility for ensuring that rubbish and recycling were put out on the appropriate days. As a result, P81 no longer has any interest in the issue as P79 now deals with it. *"To be honest, I don't deal with it any more. [P79] has got the poster on her bedroom wall and the little leaflet at the back of her bed and she deals with it.* […] *When they changed the system completely, [P79] took the leaflet upstairs and every Wednesday morning she sorts it all out."* P81 did confirm that prior to handing over the job of recycling to the teenager, information would be sought in a minimal way *"First on the leaflet. If it's not on the leaflet, tend to just put it in the household bin. I wouldn't know where to go to get the information."* P81 would not make any extra effort to get information on recycling an item which was not listed as suitable for the recycling bag.

P71 stated that Google and Bing were her search engines of choice, although, again, minimal effort would be expended, with the first non- Wikipedia result being used. (P71 stated that *"Wikipedia is not reliable."*) *"I just follow the first one as long as it's not Wikipedia. If it's something that I needed to find out and it made sense in my head, then I'd use that. I wouldn't look any further."*

Within the context of this study, information was often required by participants for the specific recycling or disposal of a particular item or type of item. In most cases this was an item which would only be disposed of once, so the information was unlikely to be required again. The term "Disposable Information" was first used as the information was about disposal. It was during the second iteration of coding the transcripts that the associated behaviours for this type of information became more apparent, allowing the term to fully emerge. Different types of information seeking behaviour are dependent upon circumstances and context. Disposable Information is

task specific and likely to only be required by an individual on a one off basis, causing different ELIS patterns to emerge.

Context dependency is relevant to this study as the participants had all just changed from one refuse and recycling scheme to a new one. Some participants were still in the changeover period of this process and one or two who worked in the Ceredigion area but lived just outside the county were on a different scheme at home to the one they had to comply with at work.

A new type of information seeking behaviour is suggested here for information that is likely to only be needed as a one-off instance – Disposable Information Seeking. Disposable Information is often not viewed as important in the normal sense of things, but is still necessary in everyday life information seeking.

During ELIS behaviour, people regularly need quick answers to minor questions, such as whether a particular item of rubbish may be recycled or not. This is an example of a piece of disposable (in every sense) information. The information is possibly only ever going to be used once, or if needed in future will be considered of low importance in the main theme of ELIS. This renders the level of ELIS behaviour used different to that for an issue of higher perceived importance, implying that less effort will be made to acquire this disposable information as it has a lower perceived importance level.

> "I do get stumped sometimes and it depends how much you want the answer to the question. If it's something that you… particularly with things like recycling, if they just don't give me an answer on something then I might just be tempted to take a short cut, on the basis that you know I tried, and if I haven't got the answer that I want. I also work on the basis with the recycling, that they're encouraging you do as much as you can, therefore if you make a couple of mistakes in terms of what you do and stuff then it's not going to kill anything." (P90)

It should be noted that not all one off use information or decision making information would be considered Disposable Information. An example of this would be choosing which university to attend – clearly this is an important decision with far reaching consequences, whereas the type of information this section is considering as disposable would not have long lasting effects on the seeker. Even Disposable Information Seeking requires some effort – one has to be motivated to get the information and have the available resources. This means that the information has some value to the seeker who has expended even a minimal level of effort to obtain it. Also, once information is found and known, it cannot be not known. (Although if it is not deemed "valuable information," it may be forgotten.) It is also possible that a

person may choose not to retain a piece of gained information, especially if they have access to it in another form, such as an information leaflet. There is potential for further research on whether a person is able to deliberately decide to “unknow” a fact or piece of information if the information is not considered of further value.

As mentioned in Chapter Two, in general information seeking, people will often continue to search for information after they have found what they require, to ensure saturation, completeness and accuracy or full verification (Foster 2004 and Kuhlthau 1991). With Disposable Information Seeking, it’s expected that the information will only be needed once, so the searcher is not as concerned about the usual safety checks. A searcher will often use the first piece of information that sounds likely or easy to find, based on the principle of least effort. When considering the PLE, there are a variety of explanations as to why people will sacrifice this quality of information over ease of use and accessibility of information, depending on the context of the information search or task. Mooers (1960) suggested that a person will only use the information they’ve sought if it will not cause the searcher subsequent difficulties. His work is often quoted as being similar to the PLE, rather than being about the use of information after the search. Another explanation could be that the context of the information seeking is for an item of disposable information – one that is foreseen by the seeker to be only required once, or for a single, unlikely to be repeated task. Even within this type of information seeking, however, it should be noted that searchers still follow several stages within the search process, as detailed in both Foster’s (2004) and Kuhlthau’s (1991) models, although they will only do those deemed necessary and will stop as soon as they feel they have the information needed for the immediate task.

This study found that people were willing to sacrifice quality of information in certain cases. From the results of the recycling information seeking interviews, it was found that people will only recycle if it is easy and fits conveniently within their lifestyle. The study participants will also only recycle if it’s both easy to get the information on how to environmentally and ethically dispose of things and then is easy to do the recycling!

Ultimately, people are only prepared to expend effort to get quality information if they perceive a value or further, continued use for that information. In general ELIS behaviour, as suggested by models such as Foster’s (2004) and Kuhlthau’s (1991), there are several elements of ELIS behaviour, which are often used either

concurrently or in a linear manner. These elements establish the safety and veracity of the information being sought. This behaviour is similar to Simon's "satisficing" (1955, cited by Prabha et al 2007), in which a decision on when to stop the information search is made. Further research to understand the differences in the emerging Disposable Information Seeking concept would be of value.

6.4 Summary

This chapter discussed what influenced the study participants' information seeking. Many people were influenced – either directly or indirectly by family members. Several participants mentioned that they have a person or persons to whom they go when they have a specific information need – these people might be a family member or just a trusted person whose advice and information has previously been useful. As expected, parents were a greater influence on children than vice versa, although several participants mentioned that their children had influenced their recycling behaviour to a limited extent. One exception to this was P89's partner, who had influenced her parent to become vegetarian and to use her car less, mainly by example.

Another expected finding was that partners influence one another, by ongoing discussion and joint lifestyle choices.

Also as expected, the study participants, particularly those who are parents, felt they influenced household members, especially their children, in information seeking for recycling and environmental issues, as well as in their actual recycling behaviour.

This was borne out in the pattern which emerged from identifying the information source preferences of the study participants, showing that all but one of the participants whose parent or parents were also interviewed showed the same first choice of information source as one or both parents. Those participants whose preference was not the same as that of both parents, followed their mother's information source preferences rather than those of their fathers. This may be due to the fact that more female participants were interviewed, and that the fathers of P71, P83, P101 and P103 were not interviewed.

When it came to influencing friends and colleagues, however, the participants felt it was more complex, as they did not want to be preaching, but in some cases still felt strongly enough to want to share their opinions and hopefully influence their peers.

This study asserts that there are many factors that influence information seeking and ELIS behaviour, including the influence of family and peers, the environment, personality traits and the perceived level of importance of the information being sought. This confirmed Foster's 2004 and his revised model , both of which suggest that there are many factors that influence information seeking, as discussed earlier in Sections 3.2.1 and 6.1.

An unexpected finding from this research is that almost a third of those interviewed (32%), considered themselves too lazy to make an effort to find certain types of information, such as that to do with recycling, which was generally considered by those participants not to be important in their everyday life information seeking.

This study also found that due to the perception of how important the information is to the ELIS of the seeker, as well as whether it is needed for a one-off incident, for an intermediate period of time, or for a longer term information need, there are different levels of searching undertaken dependent upon these factors. Also, slightly surprisingly, different levels of validity checking were carried out on the information sought – for a one-off, immediately needed piece of information, the first plausible answer found is likely to be used. This gives rise to the new notion of Disposable Information and Disposable Information Seeking, discussed in Section 6.3. For intermediate level information, additional checks are carried out, and for long term information needs, people will often search up to and beyond saturation point to ensure they have all the possible information from as many sources as they can easily access. People were willing to sacrifice quality of information in certain cases.

It was apparent from the results of the recycling information seeking interviews, with the exception of P84 and P89, that not only will people only recycle if it is easy and fits conveniently within their lifestyle, but the study participants will also only recycle if it's both easy to get the information on how to environmentally and ethically dispose of things and then is easy to do the recycling. Ultimately, people are only prepared to expend effort to get quality information if they perceive a value or further, continued use for that information.

Chapter Seven: Discussion and Conclusions

This study has described the results from interviews conducted to examine the role of peer and family influences on information seeking behaviour. The study explored the environmental information seeking behaviour of individuals within both family and social networks in the Welsh county of Ceredigion. This study explored the specific area of environmental and recycling information, pertaining to the everyday lives of the study participants. The main goals of the research are to establish what information seeking behaviour is employed by different age groups and to explore generational differences in information seeking behaviour, as well as how the interactions between members of family and social network affected these behaviours, in order to test Foster's nonlinear evolutionary framework of HISB. Previous research has considered different age groups, but not compared them within a single study. Exploration of the causes of these differences considers whether there are changes to an individual's information seeking behaviour throughout their life, using the nonlinear evolutionary framework for HISB. No other studies have concentrated specifically on generational differences in information seeking behaviour, so this research has important implications for informing government policy in the area of information dissemination methodology and advancing the knowledge within the information behaviour discipline.

The central research question for this study was:

"What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?"

The theoretical requirements of this research were to identify the information behaviour of individuals at different points in the life cycle and relate this to the nonlinear evolutionary framework, in particular comparing the effects of family or household influences and of peer group influences.

The following research areas were explored in depth and considered as subsidiary research questions, in order to answer the main research question of the study:

What influences the initial information seeking?
For what purposes is information sought?
What sources are used?
How is information sought? A detailed breakdown of methods.

How is the retrieved information used?
What influences information seeking behaviour?
How does this impact on information seeking behaviour?

These areas are discussed later in this chapter. To answer the Research Question the following Research Aim was defined:

Explore the nonlinear evolutionary framework for HISB put forward by researchers and to begin to develop and test this framework in the context of the family and the peer group.

The nonlinear evolutionary framework is the theory that human information seeking behaviour evolves over a person's life and information seeking events, rather than remaining as a specific set of steps that are followed each time the person seeks information. (See Section 2.10 and Foster 2004, 2005, 2005a; and Foster and Urquhart 2012, for more details.) Relating real world behaviours to the framework required qualitative and quantitative analysis. Information seeking behaviour is difficult, if not impossible, according to Johnson *et al.* (2006), to separate from the reason why the information is being sought, as it is very context specific.

The objectives of the research were to:

Objective Number	Objective
1.	Explore information seeking influences through examination of information seeking incidents in the family or household setting.
2.	Identify individual information seeking behaviour as it relates to environmental and recycling issues.
3.	Identify sources of information used for passive and active information seeking by individuals.
4.	Identify generational differences in information seeking behaviour and examine intra-generational nature, extent and influence of information transactions between different generations of network members.
5.	Identify and examine what influence inter-generational differences and linkages have on information seeking behaviour.

To fulfil the research objectives, the researcher conducted semi-structured interviews with up to three different generations from the sample households, who were living in the locality, to identify their information seeking behaviour patterns. This was to assess if different generations use different information sources – for

example teenagers might use the internet, while their grandparents might use more formal sources. These were interesting questions to explore as they help to inform research in the discipline about how information seeking evolves across lifespan. It was anticipated that there would be differences in the style of information seeking across generations, which were also to be compared and analysed.

7.1 What influences the initial information seeking and for what purposes is information sought?

The main influence of the initial information seeking in this study was an information need being identified by the participant. The information seeking was then influenced by the type of information need and in this study, the participant's attitude towards recycling. Data was generated in response to interview questions pertaining to recycling and the environment and the participants' attitudes to recycling and to getting information about recycling and environmental issues.

The study participant's attitudes towards recycling were geared to how easy or difficult they perceived the recycling to be and how easy it was to obtain the information about recycling. How effective it was and if there was any point to it does not seem to have a bearing on their environmental attitudes, except in few cases of "recycling evangelists".

As the newly introduced refuse and recycling scheme was changing the collection frequency, several participants who had not previously recycled were now doing some recycling, as they felt it was more beneficial to recycle as the items were disposed of more quickly. One participant suggested that people were now more aware of items that could be recycled, due to the lists of acceptable items on the recycling bags. Glass and textiles were now the only recycling materials that were not collected by the new kerbside scheme and despite the fact that this had not changed, several participants did not like having to recycle their glass separately to the rest of their recycling. Several participants suggested that an effort assessment was involved and that recycling was an ongoing activity whenever someone from the household was likely to be passing a recycling point for glass, textiles or newspapers. As mentioned in a previous chapter, no participants discussed textile recycling as an issue.

Participants also had to decide how much effort to make in deciding if items were suitable for the kerbside bags. Some participants put items into the recycling bag if they thought they were recyclable, while others put things in the landfill bag if unsure.

Although most participants seemed pleased that more was being done to collect recyclable materials, concerns were voiced by a few participants that the council was only changing the refuse system due to EU legislation, in order to meet targets and avoid fines on landfill collection quotas.

The study participants all have individual lifestyles and choose how environmentally friendly they want those lifestyles to be. They also all had various concerns about energy use and wastage, recycling, re-using of items, food miles and supporting local and fair trade producers. Participants discussed measures that they took to “do their bit” for the environment, based on these concerns.

In this study, the interview questions were restricted to investigating environmental and recycling information seeking, so in response to the preliminary questions about recycling, participants discussed a range of items that they considered suitable either to be recycled or not recycled and places where they could go to do recycling, but would not necessarily expect to find recycling information.

All study participants recycled in some way – at one end of the scale reluctantly because they felt they must, and at the other recycling absolutely everything possible. The interviews also explored attitudes to recycling and the environmental information seeking of the participants.

Foster’s revised model is based around three core processes and how these are influenced by intrinsic and extrinsic context. These encompass a range of factors, including time, project, navigation, social, organisational access as well as the information seeker’s knowledge and understanding, feelings and thoughts and their coherence and cognitive approach. While Foster’s model and subsequent refinements have been based on workplace information seeking, this study was focussed on non-work based ELIS, so some of the factors involved in the information seeking of this study are somewhat different. However, enough similarities were present to ensure thorough testing of the model.

Most information source selection takes place at the beginning of an information search and this was the case in this study. One of the Foster model’s core processes, orientation, is where source selection typically occurs, with an information seeker undertaking searching activities to place the search in the context of the

information need. These activities include problem definition, source identification and selection as well as identifying keywords, picture building, reviewing and identifying the shape of existing research. This latter activity was not featured by the participants of this study since they were not engaged in active research but in ELIS activities within the context of this investigation.

7.2 What sources are used?

People get information from a variety of different sources, people and places, depending on the circumstances and the immediacy of the information need. Foster and Urquhart (2012, p.794) state that intrinsic context affects an individual's information seeking as the person may have some subject knowledge or may be aware of the *"… existence of a social network or access to experts."* This means they can then reduce the amount of actual information seeking within the picture building activity stage of orientation to making contact with one of these people to answer their information need.

A variety of people, internet and media sources, as well as printed literature were used by the study participants. The level of trust participants placed in various information sources dictated their likelihood of using the sources. Chatman (2000) discusses the importance of trust in information seeking – and that lack of trust impedes information sharing, which in turn can lead to an information seeker feeling alienated.

The people interviewed in this study have various preferences of information source, which is also often dependent upon circumstance and information need immediacy. People's choice of information source is usually based on trust of either the person being asked or the reliability of the non-human source being accessed. This trust is based upon prior experience in the main.

The chosen information sources were often consulted in order of preference. Several of the study participants had a specific chain of information sources they chose to use. Agosto and Hughes-Hassell found that choice of information sources often became an issue of ease of access and *"… that availability largely dictated their media choices."* (2005, p. 157)

This study found that the participant's first choice of information source was the internet, possibly because the participants within this study all had access to the internet and used this as a regular source of information, creating a habit of using the

internet. This finding is supported by Gray *et al.* (2010) who state in their study on adolescent's health information seeking that *"… the internet was their primary general information source."* (p. 1467)

This study found that the second choice of information source was contact with a trusted person. Bronstein (2007) found that when information seeking, people consider how much they trust the information channel, which demonstrates that the choice of people as information sources has more to do with trust and expectation that the person in question will know the information required and will be correct, than it has to do with ease of access to that person. The researcher found that several of the participants would contact a person who was not immediately local or available to speak with on a face-to-face basis via a variety of methods from telephone to asynchronous messaging if they considered that trusted person would have the necessary information.

7.2.1 Internet Sources

All participants in this study had internet access at home and if not retired, at their work or study place. All participants were able to use the internet, although, as previously stated, a few chose not to access it for information seeking. Three participants were uncomfortable using the internet, although this was more to do with them not wanting to spend the time to learn how to use it, rather than not trusting it as an information source, as they all stated that they asked their partners to get information from the internet if they required it.

The participants within this study nearly all used the internet to search for information on environmental issues. The study participants as a whole tended to term "the internet" as an information source in addition to their description of Google and other search engines as information sources. They nearly all appeared unaware that Google is *not* actually an information source, rather than the *"essential tool"* for searching and retrieving similar or relevant information sources described by Hillis, Petit and Jarrett. (2013, p.3)

When considering the internet, 24 of the 38 interviewees (63% - Note that allowing for the three non-internet users, this rises to 68.5% of the interviewees) named Google as an information source they would use. One of the reasons Google is so widely utilised is that it is easy to use, requiring only a natural language phrase or keyword to search for an answer to a question. From a quick single word search, a

list of results, ranked for relevance according to Google's algorithms, is returned to the searcher.

It is worth noting that the older generation often looked at nearly all the results in turn, often continuing to do so for several pages of results, while the younger generation often only looked at the first page, sometimes only the top few results. There are several possible reasons for this, one of which is that the younger generation are more used to using the internet as an information source than the older generation. Another is that the older generation arguably have more time available to consider the search results more fully. It is also possible that the younger generation is more used to information being available quickly and on demand, so they do not always take the time to consider more than the first few answers returned by a quick internet search. It would be interesting to investigate this phenomenon further. A further reason could be connected to trust of information source, with younger participants trusting the internet as an information source more than the older participants in this study, causing respectively less checking of the retrieved information.

Although almost a third of participants had used the council's website to find recycling information, a quarter of these website users said it was difficult to navigate or obtain the required information, while only one participant commented that the information was there in full. This differed from their usual internet experience, as all the participants in the study who used the internet reported that they usually had no difficulties finding information online.

Forums and social media such as Facebook and blogs were mentioned by nine of the participants as information sources. Forums and discussion boards were mainly used for gaming or for college work by P79 and P80; while P85, P90 and P95 use them as additional information sources; P107 uses them to keep in touch with students and colleagues; but all participants who mentioned forums said that they used forums to exchange information.

Several participants use Facebook to get local information and both Facebook and Twitter to keep in touch with friends and colleagues. P107 considers that Facebook, is essentially *"… a network of friends and acquaintances you build up,"* and enabled personal empowerment.

Blogs were distrusted by both participants who mentioned them, who felt that they were an interesting information source, provided the authorship of the blog was clear

and could be checked by cross referencing. Even so, both only used them as an additional information source to obtain other information source leads.

7.2.2 People as Information Sources

The second choice of information source for 58% of the participants (22 of 38) was a person they knew. People were often used for getting information with little effort, as participants usually felt that they knew someone who would know the answer to most environmental or recycling issues. Several participants mentioned that they have a person or persons to whom they go when they have a specific information need – these people may be a family member or just a trusted person whose advice and information has previously been useful. The findings of Agosto and Hughes-Hassell (2005) and Lathey and Hodge (2001), are that asking other people is considered to be the easiest way to access information, specifically family, friends, neighbours and peers. Williamson (2005) and Tsai (2010) both note the importance of interpersonal connections, while Tsai and Kim (2013) note that peer influence is a major factor in information seeking. This is partly to do with trust in the information being provided and partly due to trust in the person providing the information.

7.2.3 Documents

Several types of documents were mentioned in the course of the interviewing cycle. Newspapers featured as a strong source of information – particularly in the older Generation 1 participants, although all participants regardless of age consulted the local paper, the Cambrian News to some extent, although not necessarily to do with environmental or recycling issues.

Newspapers generally were more regarded as a quality information source by the participants. This is borne out by the research of Williamson (1998) who states that newspapers were the second most used information source in her study of older adults in Australia. However, one participant, P104, described how environmental publications often did not include sufficient references to the science being quoted to enable a reader to establish the veracity of what was published, which she found irritating.

One of the findings of this study was that study participants generally used a physical aide memoire to keep track of what items could and could not be recycled under the new scheme. Almost half (16 of 38 interviewees) said they used the

“recycling wheel” which was provided by the council at the start of the new scheme. It is also possible that participants choose not to retain some mundane recycling information, especially if they know they have access to it in another form, such as an information leaflet. This behaviour ties in with the notion of Disposable Information Seeking Behaviour discussed in Section 6.3.

7.2.4 Media Sources

A range of media sources were mentioned in the interviews, including television, radio, and newspapers. Several participants mentioned that they often had the radio on in the background, and were aware that they obtained information passively in this manner. Several participants said they used newspapers to follow up information they may have gained passively from other sources, such as having the radio on in the background.

7.2.5 Locations

A range of places and organisations were also used as information sources by the study participants, ranging from the local refuse and recycling site and the Centre for Alternative Technology to visiting places such as the local village shop, local Tourist Information centre and libraries or school learning resource centres.

This section has reiterated the range of information sources consulted by the study participants, fulfilling research objective 3.

7.3 How is information sought? - A detailed breakdown of methods.

This section will summarise the ways in which people seek information, looking at information seeking habits and the themes which arise from these habits. As stated previously, people use a variety of sources of information. Most have a preference, often dictated by ease of access or habit. The detailed ways in which study participants used these sources to seek information were discussed fully in Chapter Five. The study participants’ preferred information source choices are the internet, followed by people. Google is the preferred internet search engine, with 63% of the study participants using it as their first choice. These preferences were found across the generations in this study, and this was an unexpected finding, as it had been anticipated that there would be differences in the style of information seeking and information source choices across the generations, which were also to be compared and analysed.

People use a variety of different methods to obtain information, both directly and passively. However, as previously stated, most people have a preferred way to do this, which becomes habitual, with participants often using the same sources and information seeking behaviours whenever they encounter an information need. Lincoln and Guba (1985) state that *"… most humans tend to follow the same patterns of behaviour (these are often called habits; habits are followed because they conserve energy)."* (p. 143) This follows Zipf's Principle of Least Effort, with people choosing to seek information in the easiest or most familiar way known to them.

When discussing trust of information from the internet, several participants mentioned that they cross checked the information they found, often by going to two or more websites and comparing the information, however, there were a few who said that they just used the first result on Google, basing this upon the fact that it's on the internet so it must be right.

As previously discussed, nearly all the participants were aware of a need to check internet derived information for veracity, even if it was only by using a different website.

The participants all described browsing behaviour starting with a key word or phrase search in an internet search engine, followed by considering the results listed. A definite pattern of search activity emerged from the interviews, which was described in Section 5.2.1. The steps outlined were broadly followed by all the participants who used the internet to search for information. Due to the different research settings, certain of the information seeking behaviours prevalent in Foster's model, such as chaining and monitoring were not evident in the information seeking activities of the research participants in this study. Key word searching and eclecticism, however, were evident in the participants' search activities.

During the interviews, participants discussed that they just chose a single word to enter into an internet search engine as a starting point and then broadened their search dependant on the returned results, often just by picking results they thought looked as if the information they sought might be included. These actions fit within the core processes of orientation and opening in Foster's model, as the participants chose and then used their search criteria, however, as can be seen from the steps outlined in Section 5.2.1, they quickly moved on to consolidation processes, having often only spent a very short amount of time orienting themselves within the search

before deciding that information sufficiency had been achieved.

A generational difference occurred in that Generation 1 participants often looked at nearly all the results in turn, often continuing to do so for several pages of results, while the Generation 3 participants often only looked at the first page, sometimes only the top few results, as mentioned previously.

Several participants mentioned discovering information by accident either when not seeking it or receiving information in a passive way, such as being told certain information by another person. This type of information receiving is often part of everyday life and conversations in which a person is involved, as discussed by Bates (2002). Other ways in which people receive information passively are via social media and via literature sent by the local authority or other organisations and delivered door to door.

Seeking information for a specific information need was approached in a slightly different way to just browsing on the internet by some participants. Although several (P103, P71, P93) said they would begin their search in the same way as they would for general browsing, P83 stated that she would have a think about the topic, decide what information was required and then research those areas, before reappraising what additional information might be required to complete the task.

Typically, the participants did not feel they had any environmental information needs when asked, but stated that when faced with an information need, they used a range of methods to obtain the information they required. P102 was fairly typical in that she asked people that she felt would know the information, looked at other people's actions and behaviour and used the internet, usually via a search engine such as Google. In cases where there was more time available to meet the information need, participants often described a lengthier process by which the information was obtained, often involving several more steps of information cross-checking and referring to trusted people.

7.4 How is the retrieved information used?

Even though the study found that all three generations use the internet to seek information, with 63% using it as their first choice of information source, there did not appear to be any significant generational differences in information seeking behaviours.

There are generational differences in the ways in which information is used:

- Generation 1 people pass the information on to Generation 2 and Generation 3 people
- Generation 1 people pass the information on to family and friends in all generations
- Generation 2 tend to disseminate information to work colleagues and their own children, but not to their friends or non-work peers
- Generation 2 people pass the information on to Generation 3 (and occasionally Generation 1) family and household members
- Generation 3 people use the information they find and do not disseminate it in most cases.

P80 was an exception to this, in Generation 3, in that she said that she would post information she had found onto the forums she used, as if she had found the information useful, other peers on the forum were also likely to find it useful.

Some participants disseminate information on recycling at their places of work, both in person and via electronic messaging. While some participants use Facebook and Twitter as information sharing platforms, to share and disseminate information in connection both with environmental lobbies and social events, as well as with students and colleagues within the local university.

7.5 What influences information seeking behaviour?

Both this study and Foster's model suggest that a range of factors influence information seeking behaviour. Foster's 2004 model suggests that these factors include both internal and external context as well as a person's cognitive approach.

His revised model reorganises these factors, with them becoming intrinsic and extrinsic context. These now combine cognitive approach and intrinsic context, with Foster and Urquhart stating that *"This new category represents a group of variables expressing aspects of ways of thinking, experiencing, and interacting with information problems."* (2012, p.798) The new variables are broader than those in the original model, becoming Personality and Learning, Knowledge, Affect, and Motivation, although they still cover the same areas, with the addition of motivation, which was assumed to be present in information seeking in the original model. Foster and Urquhart go on to say that *"Extrinsic context as an element of the model emphasises that an information seeker is not isolated from the multiple factors surrounding their information seeking."* (2012, p. 799) This study also found that

attitude to recycling was a factor in environmental information seeking. All these factors will be summarised in the following sub-sections.

7.5.1 Speed

The opinions of other people are often used in information seeking. People are seen and used as valuable, trusted information sources, as discussed in Section 7.2.2. People are often also seen as a reliable way to obtain information quickly.

7.5.2 Ease

There is an issue of ease of access of information – if it is difficult to access information, people stop searching when they achieve the lowest level of sufficiency. If information was readily and easily available, participants searched more thoroughly and fully. This in turn impacts upon people's everyday behaviour – if information about what may be recycled or how it may be recycled is not easily available, people will simply put the item under investigation into their landfill refuse after a quick attempt at finding the information.

An unexpected finding from this research is that almost a third of those interviewed (32%), considered themselves too lazy to make an effort to find certain types of information, such as that to do with recycling, which was generally considered by these participants not to be important in their everyday life information seeking. As a result, people employ Zipf's "Principle of Least Effort" in their everyday life information seeking behaviour. This finding also fits with Foster's model in that personality traits have an effect on information seeking behaviour.

7.5.3 Peers

Peer networks are often made up of local groups of friends, family members or work colleagues and are a source of information sharing for many people. Williamson (2005, p. 130) suggests that *"… family, friends and colleagues, […] play a significant role"* in information seeking. P99's experience and use of social networks for information seeking, such as the pub, hairdresser, and her landlord show that these networks are a valuable information resource. That these kinds of peer networks are experienced in social places is supported by the work of Pettigrew (1999) in her treatise on information grounds.

Tsai and Kim (2013) note that peer influence is a major factor in information seeking. This is partly to do with trust in the person providing the information, as well

as trust in the information the person provided. P76 discussed her use of social contacts when seeking information. This theme was discussed in Chapter Six.

It should be noted that peer networks are becoming increasingly internet based. Part of the reason for this is that many families are now geographically more scattered than in previous generations. Facebook and other internet media are increasingly used to keep in touch, not just with family members, but also with friends and acquaintances.

7.5.4 Family

Chapter Six discussed what influenced the study participants' information seeking. Many people were influenced – either directly or indirectly by family members and it was also found that partners influence one another, by ongoing discussion and their joint lifestyle choices.

As expected, parents were a greater influence on children than vice versa, although several participants mentioned that their children had influenced their recycling behaviour to a limited extent. One exception to this was P89's partner, who had influenced her parent to become vegetarian and to use her car less, mainly by example.

It was discovered from the interviews that family, in particular, parents, influence their children's information seeking habits and lifestyle choices. This was borne out in the pattern which emerged from identifying the information source preferences of the study participants, showing that all but one of the participants whose parent or parents were also interviewed showed the same first choice of information source as one or both parents. Those participants whose preference was not the same as that of both parents, followed their mother's information source preferences rather than those of their fathers. This may be due to the fact that more female participants were interviewed, and that the fathers of P71, P83 and P103 were not available to be interviewed.

The children in both Generations 2 and 3, within this study were influenced in their everyday life information seeking habits by their parents, particularly by their mothers. Although as previously mentioned, this may be due to less fathers having been interviewed than mothers - it is possible that more male interviewees would have been more influenced by their fathers rather than their mothers.

- Generation 1 participants were influenced by their partners and peers

- Generation 2 participants were influenced by their parents, partners, peers and children
- Generation 3 participants were influenced by their parents and their peers
- Generation 1 participants were not generally influenced by their children[4]

The influence of children upon parents was less than the reverse influence – children's influence mostly served as a reminder to parents of what recycling action they should be undertaking, rather than being connected to their ELIS behaviour.

7.5.5 Future use of information

If study participants perceived that the information they were seeking was only going to be used on a one off basis, the study found that they were less inclined to make their usual effort to obtain and verify the information. This is the newly proposed notion of Disposable Information, discussed fully in Chapter Six, whereby people will only make the minimum effort necessary to obtain information they will discard after a single use. With regards to recycling and the environment, this type of information may pertain to an issue such as how or where to recycle a particular item or perhaps just the information about whether it can or cannot be recycled. In these types of cases, once the item has been recycled or placed in household refuse, the information is no longer needed – it's regarded as disposable.

The level of effort used to gather this type of information is considerably less than that used for information perceived by the user to be of more import – if for example the information sought is likely to be used more than once, or is on a subject that the user finds more interesting. Often the checks that a user would use to ensure the information was from a reliable source is not followed up in any way – information is accepted at face value as this is the easiest course of action to take. This was especially true of the teenagers interviewed for this study. They, in particular were quite happy to accept the first hit from search engines such as Google, looking no further than the first advert, in some cases. Worryingly for the information and computer literacy of some of the participants, the teenagers in particular did not always realise that the first section of search results on the search engine pages were advertisements.

[4] One exception to this was P89's mother in law, as discussed previously in Chapter 6.

This study also found that people were willing to sacrifice quality of information in certain cases. From the results of the recycling information seeking interviews, it was found that people will only recycle if it is easy and fits conveniently within their lifestyle. The study participants will also only recycle if it's both easy to get the information on how to environmentally and ethically dispose of things and then is easy to do the recycling. Ultimately, people are only prepared to expend effort to get quality information if they perceive a value or further, continued use for that information.

7.6 How does this impact on information seeking behaviour?

This study asserts that there are many factors that influence information seeking and ELIS behaviour. As discussed above, speed and ease of obtaining the information, peers, family and the future usefulness of the sought information are all factors that have an impact on information seeking behaviour. These factors combine to make up people's everyday lives and are inter-related. The reason for the information seeking is a major influence on the information seeking behaviour that will be undertaken: an important decision will engender a large amount of research and cross-checking of information, usually from as many sources as time and resources permit the seeker to explore. However, if the sought information is pertaining to how and where to recycle an item, the first piece of likely information, often with no cross-checking, is frequently used. In some cases within this study, participants suggested that if they thought an item could be recycled, they would place it in the recycling bag with no checking or information seeking at all. This is an example of the Disposable Information and Disposable Information Seeking proposed in Chapter Six.

7.7 What this study contributes to our understanding of ELIS

Previous research has considered different age groups, but not compared them within a single study. This study has considered three generations and compared their information seeking behaviour.

One significant finding of this study is that there are no major differences in information seeking behaviour between the generations interviewed within this study. All the study participants' preferred information source choices are the internet, followed by people. Even the participants who claimed not to use the internet, in fact

had someone else, usually their partner, access the internet on their behalf. Google is the preferred internet search engine, with 63% of the study participants using it as their first choice. These preferences were found across the generations in this study, and this was an unexpected finding, as it had been anticipated that there would be differences in the style of information seeking and information source choices across the generations, which were also to be compared and analysed.

This may be in part due to the content of the interview questions and topic. Further research into this phenomenon, with a wider scope of questioning, would identify if this is indeed the case. While this finding fulfilled research objective 4, the discovered lack of any discernible generational differences in information seeking behaviour being observed, meant that research objective 5 was not able to be fully explored, although some generational differences in information use were identified, namely the way in which information is disseminated by different generations, as detailed in Section 7.4.

Another finding of this study is that there is some confusion about Google in respect of its status as either a tool or an actual information source. The study participants as a whole tended to term “the internet” as an information source in addition to their description of Google and other search engines as information sources. They nearly all appeared unaware that Google is *not* actually an information source, rather than the *“essential tool”* for searching and retrieving similar or relevant information sources described by Hillis, Petit and Jarrett. (2013, p.3)

This study has also considered whether Foster’s nonlinear information seeking behaviour model is transferable to everyday life information seeking situations. It may be concluded that this is the case, as the ELIS behaviour exhibited by the participants within this study fits within the model’s core processes and, as suggested by the revised (2012) model, the behaviours are affected by interaction with intrinsic and extrinsic contexts. It is not possible to generalise if the model is transferable in all types of ELIS behaviour, as this study focused on environmental information seeking, rather than general ELIS.

The new type of information suggested in Chapter Six, Disposable Information and its attendant Disposable Information Seeking Behaviour are also potentially significant to the field of ELIS research. As this phenomenon is newly discovered it will require further investigation to assess its full impact on the research area.

7.8 Limitations due to environment issues

As stated above, due to the limitations of asking people only about their environmental and recycling information seeking, it is not possible to generalise that this is how the study participants would seek information for other topics. This provides scope for potential future research, which is discussed below.

7.9 Further research and recommendations

Subsequent to the work presented in this study, there are a number of areas which could be further investigated. These include

- Longitudinal changes to the information seeking habits of the same group of participants could be identified by conducting further research on the sample. The interview cycles within this study were completed in 2012, which means that all the existing participants are now aged over 18, so would no longer be considered vulnerable, so interviews with this group could also be conducted inviting a wider range of information seeking topics, to understand if the information seeking behaviour which emerged in this study is in fact typical for other types of information seeking.
- To further address the issue of parental influence, an additional set of interviews with the fathers of P71, P83, P101 and P103, all of whom were unavailable to be interviewed at the time of the interview cycle in this study, would identify their information source preferences and establish differences and similarities with both their partner's and children's choices and assist in confirming which of the influences is stronger on the household's children.
- Further research into the social networking aspects of information seeking would also be of benefit, as the expected pattern of social networks and influences may be revealed with a wider range of questioning about information seeking topics. This could be explored by considering specific groups, such as sports teams or particular social groups. Qualitative interviews could be conducted with people who are members of one or more of these groups to identify any influences to their information seeking behaviour due to group membership.
- As stated in the previous section, further research exploring the concept of the new Disposable Information and Disposable Information Seeking would

also be of benefit. This could be done using critical incident technique interviews using a wider population and a more diverse set of topic questions.

- Variations in information seeking behaviour among different socio-economic groups could be investigated, to identify any implications on how information is disseminated to different groups. As an example, the change4life programme could be used as an introduction to health and fitness information seeking behaviour for this research.[5]
- Further study into the reasons behind why certain searchers check every page of results returned in an internet search and others just use the first few hits would also be of benefit. It would be interesting to discover whether this is due to life cycle changes, generational differences, personality traits or trust of information sources generally.
- This study has looked at the relationships that influence information seeking and was unable to measure the full scope of these influences. Further research could be undertaken to measure the influence of these relationships.
- Additional research into the applicability of Foster's revised nonlinear evolutionary information seeking framework to general ELIS behaviour in non-workplace situations would also be of benefit to confirm the findings of this study.

It would be recommended that the council's website pages pertaining to recycling and environmental issues be updated to enable easier navigation and search of the materials within the website, since several participants in this study mentioned how difficult it was to obtain information on what and where to recycle.

7.10 Concluding Remarks

This study set out to answer the research question "What is the influence of peers and family on the everyday information seeking behaviour of a specific set of family groups and social networks?" by way of a research aim and a set of research objectives, which were set out at the start of this chapter.

[5] http://www.nhs.uk/change4life/Pages/change-for-life.aspx

7.10.1 Exploration of research objectives

Research objectives 1 - 4 were fully explored, with objective 5 being partially met.

- Objective 1, to explore information seeking influences through examination of information seeking incidents in the family or household setting, was met by interviewing the study participants and collating their responses to the interview questions.
- Objective 2, to identify individual information seeking behaviour as it relates to environmental and recycling issues, was achieved with the consideration of the methods used by the study participants to seek information, as stated from the interviews.
- Objective 3, to identify sources of information used for passive and active information seeking by individuals, was achieved with the examination of the information sources discussed during the interviews.
- Objective 4, to identify generational differences in information seeking behaviour and examine intra-generational nature, extent and influence of information transactions between different generations of network members, was met with the finding that there are no substantial information seeking differences across the generations of the study participants.
- Objective 5 was to identify and examine what influence inter-generational differences and linkages have on information seeking behaviour. This was partially met with the realisation that although there were no discernible differences in inter-generational information seeking behaviours, there were some differences in the usage of the retrieved information, particularly with regards to information dissemination.

The research question therefore was answered in that the influence of peers and family members was significant on the study participants' everyday life information seeking behaviour. After the internet, people were identified as the next favoured choice of information source. This appears to be due to the level of trust placed in people known to information seekers as being able to provide correct and timely answers to information needs. In addition to this, several participants mentioned people that they would ask about how to get information, as opposed to just asking these people for the information. These "experts" were all older than the participants who mentioned them, one participant stating *"It goes back to asking older people."*

(P80) This was due to the perception that an older person usually knew, often having already had the experience that the younger person was trying to seek information about.

In final conclusion, this study has found no discernible differences in inter-generational everyday life information seeking behaviour, with all study participants, regardless of age using either the internet or trusted people to seek information. The ways in which the information was sought depended upon the immediacy of the information need and the proximity of either a person or access to the internet did not define the study participant's first choice of information source. These choices were inherent and habitual parts of their ELIS behaviour.

This study has found some generational differences in the ways in which the retrieved information is used, with different levels and targets of information dissemination apparent in the different generations, (as detailed in Section 7.4)

The influence of family and friends on a person's everyday life information seeking behaviour was significant, with most study participants using trusted sources, such as peers or family members, to either obtain information directly or enquire how to find the required information.

This study found that Foster's nonlinear evolutionary framework model of information seeking was applicable to the non-workplace ELIS situation of this study, with the participants exhibiting the information seeking activities suggested by the model throughout the information seeking processes, in line with the core processes of both Foster's 2004 and revised 2012 models.

References

Agosto, D.E and Hughes-Hassell, S. (2005) 'People, places and Questions: an investigation of the everyday life information-seeking behaviors of urban young adults.' *Library & Information Science Research,* 27, pp. 141 - 163.

Ahearne, J. (1995) *Michel de Certeau: Interpretation and its other.* Cambridge, UK: Polity.

Ahearne, J. (2010) 'Michel de Certeau, the Practice of Everyday Life.' *International Journal of Cultural Policy* 16(1) pp. 2 - 3.

American Anthropological Association Website (no date) Available at: http://blog.aaanet.org/ethics-task-force/ethics-task-force-first-principle/ (Accessed 25/3/15).

Attfield, S., Blandford, A., and Dowell, J. (2003) 'Information seeking in the context of writing A design psychology interpretation of the "problematic situation".' *Journal of Documentation* 59(4) pp. 430 – 453.

Bates, M. (2002) 'Toward an integrated model of information seeking and searching.' *The New Review of Information Behaviour Research*, Vol 3, pp 1-15.

Bates, J.A. (2004) 'Use of narrative interviewing in everyday information behaviour research.' *Library & Information Science Research*, 26(1), pp. 15 – 28.

Bates, M.J. (2009) 'An introduction to metatheories, theories and models.' In Fisher, K., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 1 - 24.

Battelle, John. (2005) *The Search: How Google and its rivals rewrote the rules of business and transformed our culture.* London: Penguin.

Bawden, D. (1986) 'Information systems and the stimulation of creativity.' *Journal of Information Science* August 1986 12(5) pp. 203-216.

Behesti, J. (2012) 'Teens, virtual environments and information Literacy.' *Bulletin of the American Society for Information Science and Technology,* 38(3), pp. 54 – 57.

Berger, P.L. and Luckmann, T. (1967) *The social construction of reality: A treatise in the sociology of knowledge.* New York: Anchor Press.

Bourdieu, P. (1984) *Distinction: A social critique of the judgement of taste.* London: Routledge.

Bronstein, J. (2007) 'The role of the research phase in information seeking behaviour of Jewish studies scholars: a modification of Ellis's behavioural characteristics.'

Information Research, 12(3) paper 318. Available at: http://InformationR.net/ir/12-3/paper318.html (Accessed 8/10/12).

Burnett, G. (2000) 'Information exchange in virtual communities: a typology.' *Information Research*, 5(4) Available at: http://informationr.net/ir/5-4/paper82.html (Accessed 14/4/15).

Burnett, G., Besant, M., and Chatman, E.A. (2001) 'Small Worlds: Normative Behavior in Virtual Communities and Feminist Bookselling.' Journal of the American Society for Information Science and Technology, 52(7), pp. 536–547.

Burrell, G. and Morgan, G. (1979). *Sociological Paradigms and Organisational Analysis.* Aldershot: Ashgate Publishing Limited.

Capurro, R. (1992) 'What is information science for? A philosophical reflection.' In Vakkari, P. and Cronin, B. (eds.), *Conceptions of library and information science. Historical, empirical and theoretical perspectives.* London: Taylor Graham, pp. 82-96.

Case, D. O. (2002) *Looking for information: a survey of research on information seeking, needs, and behavior.* Amsterdam: Academic Press.

Case, D. O. (2005) 'Principle of least effort.' In Fisher, K., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 289 -292.

Ceredigion County Council-2011 Census population of Ceredigion.htm Available at: http://www.ceredigion.gov.uk/index.cfm?articleid=18407 (Accessed: 24/10/13 and 5/4/14).

Ceredigion for All Annual Report 2013-14 Available at: http://www.ceredigion.gov.uk/SiteCollectionDocuments/CeredigionForAll/LSB/AnnualReportCeredigionForAll2013-2014.pdf (Accessed: 26/1/15).

Certeau, M. de. (1984). *The Practice of everyday life.* Translated by S. Rendell Berkeley, CA: University of California Press.

Chang, S-J. L. (2005) 'Chang's browsing.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 69 - 74.

Chang, Y-k., Zhang, X., Mokhtar, I.A., Foo, S., Majid, S., Luyt, B., Theng, Y-l. (2012), 'Assessing students' information literacy skills in two secondary schools in Singapore.' *Journal of Information Literacy.* 6(2). pp. 19-34.

Chatman, E.A. (1996) 'The impoverished Life-world of Outsiders.' *Journal of the American Society for Information Science 47*(3), pp. 193-207.

Chatman, E.A. (1999) 'A Theory of Life in the Round.' *Journal of the American Society for Information Science* 50(3), pp. 207-217.

Chatman, E.A. (2000), 'Framing social life in theory and research.' *The New Review of Information Behaviour Research*, Vol 1, pp 3-18.

Cooper, JM. (2004) *Analysis of the information needs and flows in the delivery of homecare to older people: an ethnographic study.* PhD thesis. University of Wales, Aberystwyth, Aberystwyth.

Cooper, J. W., and Prager, J. M., (2000) 'Anti-Serendipity: finding Useless Documents and Similar Documents. ' Proceedings of the 33rd Hawaii International Conference of System Sciences. 4-7 January, 2000, Maui, Hawaii, USA. Retrieved from: http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=926691&tag=1 doi: 10.1109/HICSS.2000.926691 (Accessed 21/4/15). IEEE, Computer Society.

Creswell, J.W. (1997). *Qualitative inquiry and research design: choosing among five traditions*. Thousand Oaks, CA: Sage Publications.

Creswell, J.W. and Miller, D.L. (2000) 'Determining Validity in Qualitative Inquiry.' *Theory in Practice,* 39(3, summer) pp. 124 – 130.

Cyngor Sir Ceredigion County Council, Strategic Equality Plan Annual Report (p15), Available at: http://www.ceredigion.gov.uk/Democratic_Services_Meetings_Public/E.%20Learning%20and%20Partnerships.pdf (Accessed 26/1/15).

Davenport, E., Higgins, M. and Somerville, I. (2000) 'Narratives of New Media in Scottish Households: The Evolution of a Framework of Inquiry.' *Journal of the American Society for Information Science,* 51(10), pp. 900 – 912.

Davis, N.W. and Meyer, B.B. (2009) Qualitative Data Analysis: A Procedural Comparison, Journal of Applied Sport Psychology, 21:1, 116-124, DOI: 10.1080/10413200802575700 (Accessed 9/11/16).

Diamond, A., Roberts, J., Vorley, T., Birkin, G., Evans J., Sheen, J. and Nathwani, T. (2014).UK Review of the provision of information about higher education: Advisory Study and Literature Review. Report to the UK higher education funding bodies by CFE Research. April 2014.

Douglas, J. D. (1970) 'Understanding everyday life.' In Douglas, J. D. (ed.*) Understanding everyday life: Toward the reconstruction of sociological knowledge.* Chicago: Aldine, pp. 3 – 44.

Dray, W. H. (1980) 'Collingwood's Historical Individualism.' *Canadian Journal of Philosophy* 10 (1) pp. 1-20

Ellis, D. (1989) 'A behavioural approach to information retrieval system design.' *Journal of Documentation*, 45(3) pp. 171-212.

Ellis, D. and Oldman, H. (2005) 'The English literature researcher in the age of the Internet.' *Journal of Information Science*, 31(1) pp. 29-36.

Emery, S. (1978) *Actualizations: You don't have to rehearse to be yourself.* Garden City, NY.: Doubleday.

Erdelez, S. (1997) 'Information Encountering: A Conceptual Framework for Accidental Information discovery.' Proceedings of an international conference on information seeking in contexts. 14-16 August 1996. Tampere, Finland. Wilson T. D. and D. K Allen (eds.), London, Taylor Graham, pp. 412 – 421

Erdelez, S. (1999) 'Information encountering: It's more than just bumping into information.' *Bulletin of the American Society for Information Science,* 25(3) Available at: http://www.asis.org/Bulletin/Feb-99/erdelez.html (Accessed 16/1/15).

Erdelez, S. (2000) 'Towards understanding information encountering on the Web.' In D.H. Kraft (ed.), Proceedings of the 63rd annual meeting of the American Society for Information Science. Medford, NJ: Information Today, pp. 363 - 371

Erdelez, S. (2005) 'Information Encountering.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 179 - 184.

Firmin, R.L., Bonfils, K.A., Luther, L., Minor, K.S., & Salyers, M. P. (2016, March 17). Using Text- Analysis Computer Software and Thematic Analysis on the Same Qualitative Data: A Case Example. Qualitative Psychology. Advance online publication. http://dx.doi.org/10.1037/qup0000050 (Accessed 9/11/16).

Fisher, K. (2005) 'Information Grounds.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 185 - 190.

Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), (2005) 'Theories of information behavior.' ASIST Monograph Series, Medford, NJ: Information Today.

Flick, U, (2007) *Managing Quality in Qualitative Research.* Thousand Oaks, CA: SAGE.

Foster, A.E. (2004) 'A Nonlinear Model of Information Seeking Behaviour.' *Journal of the American Society for Information Science and Technology,* 55(3), pp. 228 - 37.

Foster, A.E. (2005) 'A non-linear model of information seeking behaviour.' *Information Research*, 10(2): Paper 222. Available at: http://InformationR.net/ir/10-2/paper222.html (Accessed 5/1/07).

Foster, A.E. (2005a) 'Nonlinear Information Seeking.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 254 - 258.

Foster, A.E. (2006) 'A Nonlinear Perspective.' In Spink, A. and Cole, C. (eds.) *New Directions in Human Information Behavior.* Dordrecht: Springer, pp.155-170.

Foster A.E., and Ford, N. (2003) 'Serendipity and Information Seeking: An Empirical Study.' *Journal of Documentation*, 59(3), pp. 321 – 340.

Foster, A.E. and Urquhart, C. (2012) 'Modelling nonlinear information behaviour: transferability and progression.' *Journal of Documentation,* 68(6), pp. 784 – 805.

Foucault, M. (1970) *The Order of Things: an Archaeology of the human* Sciences. Bristol: Tavistock Publications Ltd.

Frey, L., Botan, C., & Kreps, G. (1999). *Investigating communication: An introduction to research methods.* 2nd edn. Boston: Allyn & Bacon. Outline for Chapter 10: Naturalistic Research. Retrieved from: http://mason.gmu.edu/~afinn/html/teaching/courses/f03_comm250/fbk_chapters/10.pdf (Accessed 30/4/15).

Fulton, C. (2005) 'Chatman's life in the round.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 79 - 82.

Given, L.M. (2004) 'Mini-disc recorders: A new approach for qualitative interviewing.' *International Journal of Qualitative Methods,* 3(2), Article 5. Available at: http://www.ualberta.ca/~iiqm/backissues/3_2/pdf/given.pdf (Accessed 10/1/07).

Glaser, B.G. and Strauss, L.A. (1967) *The discovery of grounded theory: strategies for qualitative research.* New York: Aldine de Gruyter.

Glazier, J.D. (1992). Qualitative research methodologies for library and information science: An introduction. In Glazier, J.D. and Powell, R.R. (eds.), *Qualitative research in information management*. Englewood, CO: Libraries Unlimited, pp.1-13.

Goetz, J.P., & LeCompte, M.D. (1981) 'Ethnographic research and the problem of data reduction.' *Anthropology and Education Quarterly*, 12, pp. 51 - 70.

Gray, N.J., Klein, J.D., Noyce, P.R., Sesselberg, T. S., and Cantrill, J.A. (2005) 'Health information-seeking behaviour in adolescence: the place of the internet' *Social Science & Medicine*, 60, pp. 1467–1478.

Griswold, W. (1987) 'A Methodological Framework for the Sociology of Culture' *Sociological Methodology* 17(2), pp. 1-35. Available at: http://www.jstor.org/stable/271027 (Accessed 25/11/16).

Guba, E. (1981) 'Criteria for assessing the Trustworthiness of Naturalistic Inquiries.' *Educational Resources Information Centre/Educational Communication and Technology Journal* Annual Review Paper 29(2) pp. 75 – 91.

Hammersley, M. (1992) *What's Wrong with Ethnography? Methodological Explorations.* London: Routledge.

Haralambos, M. and Holborn, M. (2004) *Sociology: themes and perspectives*. 6th edn. London: Collins.

Harré, R. (1983) *Personal Being: A Theory for Individual Psychology*. Cambridge, MA: Harvard University Press.

Hart, C. (1998). *Doing a Literature Review.* London: Sage.

Haythornthwaite, C. (1996) 'Social network analysis: an approach and technique for the study of information exchange.' *Library and Information Science Research,* 18(4) pp. 323 – 342.

Heinström, J. (2000). 'The impact of personality and approaches to learning on information behaviour.' *Information Research,* 5(3). Available at: http://informationr.net/ir/5-3/paper78.html (Accessed 5/1/07).

Helsper, E.J., and Eynon, R. (2010) 'Digital natives: where is the evidence?' *British Educational Research Journal*, 36(3), pp. 503-520 Available at: http://dx.doi.org/10.1080/01411920902989227 (Accessed 7/12/16).

Hersberger, J. A. (2001). 'Everyday information needs and information sources of homeless parents.' In *The New Review of Information Behaviour Research: Studies of Information Seeking in Context,* 2, pp. 119 - 134. Available at: http://www.tandf.co.uk/journals/titles/14716313.asp (Accessed 28/11/16)

Hersberger, J. (2003) 'A qualitative approach to examining information transfer via social networks among homeless populations.' [Fourth ISIC conference, Lisbon, 2002**:** the proceedings were published as] In *The New Review of Information Behaviour Research*, Volumes 3 and 4. Vol 4(1). pp 95-108. DOI: 10.1080/14716310310001631462

Hersberger, J. (2005). 'Chatman's information poverty.' In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 75 - 78.

Hersberger, J., Pettigrew, K.E. and James, L. (2001) 'Social capital as embedded in the social support networks of homeless populations.' Paper presented at Sunbelt XX: International Sunbelt Social Network Conference, 13 – 17 April 2000, Vancouver.

Hillis, K., Petit, M. and Jarrett K. (2012) *Google and the culture of search*. New York: Routledge.

Hjørland, B. (1998) 'Theory and metatheory of information science: a new interpretation.' *Journal of Documentation,* 54(5) pp. 606 – 621. doi.org/10.1108/EUM0000000007183

Hooper, L., Bartlett, C., Davey-Smith, G. and Ebrahim, S. (2002) 'Systematic review of long term effects of advice to reduce dietary salt in adults.' *British Medical Journal,* (Sep 21), pp. 325 - 628.

Itoga, M. (1992) ‘Seeking understanding beneath the unspecifiable: An alternative framework for mapping information needs for communication.’ *Libri,* 42(4), pp. 330 – 344.

Jakobson, R. (1960) ‘Closing Statement: Linguistics and Poetics.’ In Sebeok, T. A. (ed.) *Style In Language*. New York: The Technology Press of Massachusetts Institute of Technology and London: John Wiley & Sons, Inc.

Johnson, J.D.E. (2003) ‘On contexts of information seeking.’ *Information Processing & Management,* 39, pp. 735 – 760.

Johnson, J.D.E., Case, D.O., Andrews, J., Johnson, N.E. and Allard, S.L. (2006) ‘Fields and pathways: Contrasting or complementary views of information seeking.’ *Information Processing & Management,* 42(2), pp. 569–582.

Julien, H. and Michels. D. (2004) ‘Intra-individual information Behaviour in daily Life.’ *Information Processing & Management,* 40(3), pp. 547 – 562.

Kari, J. and Savolainen, R., (2003) ‘Towards a contextual model of information seeking on the web.’ *The New Review of Information Behaviour Research,* Vol 4(1), pp. 155 - 175.

Khoir, S., Du, J.T. & Koronios, A. (2015). ‘Everyday information behaviour of Asian immigrants in South Australia: A mixed-methods exploration.’ *Information Research,* 20(3). Available at: http://InformationR.net/ir/20-3/paper687.html (Accessed 30/10/15).

Kirk, J., & Miller, M. L. (1986). *Reliability and validity in qualitative research.* Beverly Hills: Sage Publications.

Kraut, R, Scherlis, W., Mukhopadhyay, T., Manning, J., Keisler, S. (1996). ‘The HomeNet field trial of residential Internet services.’ *Communications of the ACM,* 39(12), pp. 55 – 63.

Kuhlthau, C. C. (1991). ‘Inside the search process: information seeking from the user’s perspective.’ *Journal of the American Society for Information Science,* 42(5), pp. 361 – 71.

Kuhlthau, C. C. (1993) *Seeking meaning: a process approach to library and information services.* Norwood, NJ.: Ablex.

Kuhlthau, C. C. (2004) *Seeking meaning: a process approach to library and information services.* 2nd edn. Westport, CT.: Libraries Unlimited.

Kvale, S. (2007) *Doing Interviews.* Thousand Oaks, CA.: SAGE.

Lathey, J.W. and Hodge, B. (2001) ‘Information seeking behavior of occupational health nurses. How nurses keep current with health information.’ *AAOHN J: official journal of the American Association of Occupational Health Nurses,* 49(2), pp. 87-95.

Limberg, L. (1998) 'Three conceptions of information seeking and use.' In *Exploring the Contexts of Information Behaviour. Proceedings of the second international conference on research in information needs, seeking and use in different contexts.* Wilson, T. D and D. K Allen (eds.) Sheffield University, Sheffield, 13 - 15 August. London: Taylor Graham, pp. 116 - 135.

Lin, N. (2001) *Social Capital: a theory of social structure and action.* Cambridge: Cambridge University Press.

Lincoln, Y.S., and Guba, E.G., (1985) *Naturalistic Inquiry.* London: Sage Publications.

Lopatovska, I., Fenton, M. R., and Campot, S. (2012) 'Examining preferences for search engines and their effects on information behaviour.' Proceedings of the *American Society for Information Science and Technology Conference*, October 28 – 31, 2012, Baltimore, MD., USA.

Marcella, R. and Baxter, G. (2001). 'A random walk around Britain: a critical assessment of the random sample as a method of collecting data on the public's citizenship in needs.' *New Review of Information Behaviour Research*, Vol 2, pp. 87 – 103.

Marchionini, G and Komlodi, A. 2001. 'Design of interfaces for information seeking.' Retrieved from: http://www.ils.unc.edu/~march/arist.pdf

Markwei, E. and Rasmussen, E. (2015) 'Everyday Life information seeking behaviour of marginalized Youth: A qualitative study of urban homeless youth in Ghana.' *The International Information & Library Review* Retrieved from: http://dx.doi.org/10.1080/10572317.2015.1039425

Mawby, Foster and Ellis (2015) 'Everyday life information seeking behaviour in relation to the environment: disposable information?' *Library Review* 64(6/7), pp. 468 - 479. http://dx.doi.org/10-1108/LR-10-2014-0120

McKenzie, P.J. (2003) 'A model of Information practices in accounts of everyday-life information Seeking.' *Journal of Documentation,* 59(1), pp. 19 – 40.

Meadows, J. (2008) 'Fifty years of UK research in information science.' *Journal of Information Science,* 34(4), pp. 403 - 414.

Merton, R.K. (1972) 'Insiders and outsiders: a chapter in the sociology of knowledge.' *American Journal of Sociology,* 78, pp. 9 - 47.

Miles, M. B. and Huberman, A.M (1994) *Qualitative data analysis: An expanded sourcebook.* 2nd edn. Thousand Oaks, CA.: SAGE.

Mooers, C.N. (1960) 'Mooer's law, or why some retrieval systems are used and others are not.' *American Documentation* 11 (3) July I960, ii.

Mrugalska, B. and Wyrwicka, M. 'Identification of Preferred Sources of Information for Undertaking Studies in the Faculty of Engineering Management at Poznan

University of Technology.' *Business, Management and Education*, 13(1), pp. 126–139.

National Research Ethics Service. (2006) Available at: http://www.nres.npsa.nhs.uk/ (Accessed: between 20/3/06 and 12/10/07).

Nelson, E., Osaze P. and Uche P. E. (2016) 'Elderly people and their information needs.' *Library Philosophy and Practice (e-journal).* Paper 1332. Available at: http://digitalcommons.unl.edu/libphilprac/1332 (Accessed: 15/3/16).

Office for National Statistics, 2011 census Available at: http://www.ons.gov.uk/ons/datasets-and-tables/index.html?pageSize=50&sortBy=none&sortDirection=none&newquery=population+statistics+ceredigion&content-type=Reference+table&content-type=Dataset (Accessed: 24/10/13 and 5/4/14).

Orwell, G. (1949) *Nineteen Eighty-Four.* Reprint. London: Penguin, 2009.

Oxford University Press. (2015) Oxford Dictionaries. Available at: http://www.oxforddictionaries.com/definition/english/disseminate (Accessed 25/5/15).

Oxford English Dictionary. (2002) Oxford: Oxford University Press.

Pálsdóttir, Á. (2010) 'The connection between purposive information seeking and information encountering. A study of Icelanders' health and lifestyle information seeking.' *Journal of Documentation* 66(2), pp. 224 – 244.

Patton, M.Q. (2002) *Qualitative Research and Evaluation Methods.* 3rd edn. Thousand Oaks, CA.: SAGE.

Pettigrew, K.E. (1999) 'Waiting for chiropody: Contextual results from an ethnographic study of the information behaviour among attendees at community clinics.' *Information Processing & Management,* 35, pp. 801 – 817.

Pettigrew, K., Fidel, R., and Bruce, H. (2001) 'Conceptual Frameworks in Information Behavior.' Annual Review of Information Science and Technology (ARIST), 35, 2001, Williams, M.E. (ed.) Published for the American Society for Information Science and Technology (ASIST), by Information today, Inc., Medford, NJ.

Poole, H.L. (1985) *Theories of the middle range.* Norwood, NJ.: Ablex.

Prabha, C., Silipigni Connaway, L., Olszewski, L. and Jenkins, L.R. (2007) 'What is enough? Satisficing information needs.' *Journal of Documentation*, 63(1), pp. 74 – 89.Putnam, R.D. (2000) *Bowling Alone.* New York: Touchstone.

Reitz, J.M. (2002). 'Media', *ODLIS: Online dictionary of Library and information Science.* Danbury, CT: Western Connecticut State University. Available at: http://www.abc-clio.com/ODLIS/odlis_A.aspx (Accessed: 18/4/2013).

Rice, R.E., McCreadie, M., and Chang, S-J.L. (2001) *Accessing and Browsing Information and Communication.* Cambridge, MA.: MIT Press.

Rothbauer, P. (2005) 'Practice of everyday life.' In K. Fisher, S. Erdelez, and L. McKechnie (ed.), *Theories of information behavior,* ASIST Monograph Series, (pp. 284 - 288). Medford, NJ.: Information Today.

Savolainen, R. (1995) 'Everyday life information seeking: Approaching Information seeking in the context of "way of life."' *Library and Information Science Research,* 17, pp. 259 – 294.

Savolainen, R. (2005) 'Everyday life information seeking.' In K. Fisher, S. Erdelez, and L. McKechnie (ed.) *Theories of information behavior,* ASIST Monograph Series, pp. 143-148. Medford, NJ.: Information Today.

Savolainen, R. (2008) *Everyday Information Practices: a social phenomenological perspective.* Plymouth: Scarecrow Press.

Savolainen, R. (2008a). 'Source preferences in the context of seeking problem-specific information.' *Information Processing and Management,* 44. 274-293.

Scott, J. (2012) *Social Network Analysis.* 3rd edn. London: Sage.

Scriven, M. (1971) Objectivity and subjectivity in educational research. In Thomas, L.G. (ed.) Philosophical redirection of educational research (71st Yearbook of the National society for the Study of Education, Part 1). Chicago: University of Chicago Press.

Searle, J.R. (1995) *The Construction of Social Reality.* London: Allen Lane, Penguin.

Silverman, D. (2000) *Doing Qualitative Research: A Practical Handbook.* London: Sage.

Simon, H.A. (1955) 'A Behavioral Model of Rational Choice.' *Quarterly Journal of Economics*, 69, pp. 99–188.

Simon, H.A. (1976) 'The information storage system called "human memory".' In Rosenzweig, M.R. and Bennett, E.L. (eds.) *Neural mechanisms of learning and memory.* Cambridge, Mass.: MIT Press.

Sin, S-C. J. (2011) 'Towards Agency-Structure Integration: A Person-in-Environment (PIE) Framework for Modelling Individual-Level Information Behaviours and Outcomes.' In Spink, A. and Heinström, J. (eds.) *New Directions in Human Information Behaviour.* pp.181 - 210. Bingley, UK.: Emerald.

Sonnenwald, D.H., (2005). 'Information horizons.' In Fisher, K., Erdelez S., and McKechnie, L. (ed.) *Theories of information behavior,* ASIST Monograph Series, pp. 191-197. Medford, NJ.: Information Today.

Sonnenwald, D. H., Wildemuth, B.M. and Harmon, G.L. (2001) 'A Research Method to Investigate Information Seeking using the Concept of Information Horizons: An Example from a Study of Lower Socio-economic Students' Information Seeking Behaviour.' *The New Review of Information Behavior Research.* Vol 2, pp. 65 - 86.

Sparrow, B., Lui, J. and Wegner, D.M. (2011) 'Google Effects on Memory: Cognitive Consequences of Having Information at Our Fingertips.' *Science* 333, pp. 776 – 778. doi: 10.1126/science.1207745

Spender, J.-C. (1996),"Organizational knowledge, learning and memory: three concepts in search of a theory", *Journal of Organizational Change Management,* 9(1) pp. 63 – 78

Spink, A. (2004) 'Multitasking information behavior and information task switching an exploratory study.' *Journal of Documentation*, 60(4): pp. 336 - 351

Spink, A., and Cole, C. (2006) 'Human information behavior: Integrating information use and various approaches.' *Journal of the American Society for Information Science*, 57(1), pp. 25-35.

Strasser, T.C. (1978) 'The information needs of practicing physicians in northeastern New York State.' *Bulletin of the Medical Library Association,* 66(2), pp. 200–209.

Strauss, A. and Corbin, J. (1990) *Basics of qualitative research: grounded theory procedures and techniques*. Newbury Park, CA.: Sage Publications.

Sujatha, S. (2014) 'Exploring information seeking behaviour in the changing ICT environment: A snapshot of Kakatiya University facility.' *International Journal of Information Services and Technology,* 1(1), pp. 11-14.

Summerbell, C.D., Waters, E., Edmunds, L.D., Kelly, S., Brown, T. and Campbell, K.J. (2005) 'Interventions for preventing obesity in children.' *The Cochrane Database of Systematic Reviews 2002*, 2(Jul 20; 3), Art. No.: CD001871.

Talja, S. (1996) 'Constituting "Information" and "User" as research objects: A theory of knowledge formations as an alternative to the Information-Man Theory.' Proceedings of an international conference on Information Seeking in Context, 1996. pp. 67-80. London: Taylor Graham.

Toms, E.G. (1998), 'Information Exploration of the Third Kind: The Concept of Chance Encounters.' A Position Paper for the Chi98 Workshop on Information Exploration. Available at: http://archive.is/T1NxY (Accessed 21/7/15).

Toms, E.G. (2000) 'Understanding and facilitating the browsing of electronic text.' Journal of Human-Computer Studies, 52, pp. 423 – 452.

Tsai, T-I., (2010) 'The Social Networks in the Information Horizons of College Students: A Pilot Study.' Proceedings of the American Society for Information

Science and Technology Conference 22-27 October 2010. Pittsburgh, USA. Vol 47(1)

Tsai, T-I., Kim, K-S. (2014) 'Information Horizons of College Students: Source Preferences and Source Referrals in Academic Contexts.' *Proceedings of the American Society for Information Science and Technology* 50(1), Article first published online: 8 May 2014. DOI: 10.1002/meet.14505001120

Tuominen, K., and Savolainen, R. (1996) 'A social constructionist approach to the study of information use as discursive action.' Proceedings of an international conference on information seeking in contexts. 14-16 August 1996. Tampere, Finland. T. D. Wilson, T.D. and D. K Allen. (eds) London, Taylor Graham, pp.81 – 96.

Tuominen, K., Talja, S. and Savolainen, R. (2002), "Discourse, cognition and reality: towards a social constructionist metatheory for library and information science", in Bruce, H., Fidel, R., Ingwersen, P. and Vakkari, P. (eds) Emerging Frameworks and Methods COLIS 4: Proceedings of the 4th International Conference on Conceptions of Library and Information Science, Seattle, WA, July 21-25, 2002, Greenwood Village, CT.: Libraries Unlimited, pp. 271 - 83.

Vakkari, P. (1994) 'Library and information science. Its content and scope.*' Advances in Librarianship.* Vol. 18. New York: Academic press, pp. 1 - 55.

Vakkari, P. (1998) 'Task complexity, information types, search strategies and relevance: integrating studies on information seeking and retrieval.' In *Exploring the Contexts of Information Behaviour. Proceedings of the second international conference on research in information needs, seeking and use in different contexts.* Sheffield. UK, 13-15 August. T. D. Wilson, T.D. and D. K Allen. (eds) London: Taylor Graham, pp. 35 - 54.

Vasconcelos, A., Sen, B., Rosa, A. and Ellis, D. (2012) 'Elaboration of grounded theory in information research: arenas/social worlds theory, discourse and situational analysis.' *Library and Information Research* 36(112), pp. 120 – 146.

Vickery, S. (2000). *Health information for Children.* Unpublished MSc Thesis. University of Wales, Aberystwyth, Aberystwyth.

Whyte, W.F. (1981) *Street Corner Society*. Chicago: University of Chicago Press.

Wick, D.A. (2004) 'Older Adults and their information seeking.' *Behavioral and Social Sciences Librarian* 22(2) pp. 1 - 26.

Williams, R. (1977) *Marxism and Literature.* Oxford: Oxford University Press.

Williamson, K. (1998) 'Discovered by chance: the role of incidental information acquisition in an ecological model of information use.' *Library & Information Science Research* 20(1) pp. 23 – 40.

Williamson, K. (2005) ‘Ecological theory of human information behavior.’ In Fisher, K.E., Erdelez, S. and L. McKechnie (eds.), *Theories of information behavior,* ASIST Monograph Series, Medford, NJ: Information Today, pp. 128 - 132.

Wilson, P. (1977) *Public knowledge, private ignorance.* Westport, CT.: Greenwood Press.

Wilson P, (1983) *Second-Hand Knowledge: An inquiry into cognitive authority.* Westport, CT.: Greenwood Press. (pp. 148 – 157… pertinent to Life in a Small world.)

Wilson, T.D. (1997) ‘Information behaviour: an interdisciplinary approach.’ *Information Processing & Management*, 33(4), pp. 551-572.

Wilson, T.D. (2000) 'Human Information behaviour.' *Informing Science*, Special Issue on Information Science Research 3(2), pp. 49-55.

Wilson, T. D. (2006) "A re-examination of information seeking behaviour in the context of activity theory." Information Research - an International Electronic Journal 11(4). http://InformationR.net/ir/11-4/ paper260.html (Accessed 24/9/13).

Winter, G. (2000). ‘A Comparative Discussion of the Notion of 'Validity' in Qualitative and Quantitative Research.’ *The Qualitative Report*, 4(3 & 4, March). Available at: http://www.nova.edu/ssss/QR/QR4-3/winter.html (Accessed: 23/1/2007).

Zhang, Y., and Wildemuth, B.M. (2009). ‘Qualitative analysis of content.’ *Applications of social research methods to questions in information and library science*, pp. 308-319.

Zipf, G.K. (1949/1972) *Human behavior and the principle of least effort: an introduction to human ecology.* New York: Hafner Publishing Company.

Appendices

Please note that Appendices One, Two and Four were given to research participants on official University headed paper.

Appendix One: Research Information Letter

Research Information Letter

My name is Janet Mawby and I am a post graduate researcher reading for a PhD at Aberystwyth University's Department of Information Studies.

My research is investigating how people of several age groups look for information about the environment and recycling in their everyday lives. For research purposes, I would like to ask you some questions about the way you look for information on these topics. I will interview you at a location of your choice such as the Arts Centre or a café in the town centre. Telephone or online interviews may also be arranged, if that is more convenient for you.

Interviews will take approximately half an hour and will be at a time convenient to you. I would like to record the interview, but I accept that you may prefer not to be recorded, in which case notes will be taken .If possible I would like to contact you again in a year's time for a follow-up interview – there is an additional form to complete to allow me to do this, as well as a new consent form when I interview you again.

Participation is entirely voluntary and you can withdraw at any time without giving a reason. The identity of all participants will be kept confidential, with pseudonyms used in the report and in any publications written about the study. All data will be stored securely at the researcher's home, only for as long as necessary and in accordance with Aberystwyth University and National Research Ethics Service recommendations. All participants will be given the opportunity to view and comment on a transcript of their interview. Audio tapes will be transcribed anonymously and will be destroyed at the end of the study. This study has been accepted by the Aberystwyth University Ethics Committee for Research Procedures.

There would also be a very short questionnaire to complete at the first interview. The questionnaire is divided into two sections – one containing your personal information, and one containing anonymised demographic information for the purposes of analysing the details of those who have been interviewed. The two parts will have a shared code number, which I will keep confidential to maintain your anonymity.

Depending on your age, your parents may also need to agree. I'll be following our department's ethical guidelines.

If you would like to discuss the research further, please contact me.

Email – jam06@aber.ac.uk

Telephone - 01970 622161 / 622188

Post - Janet Mawby, PhD Student, Department of Information Studies Room 239, DIS Building , Llanbadarn Campus, Aberystwyth University Aberystwyth, SY23 3AS

Appendix Two: Interview Consent Form

Consent Form
Title of project: Information Seeking Behaviour Survey
Name of researcher: Janet Mawby
Project authority: This research project is being undertaken as part of a doctoral degree in Information Studies from Aberystwyth University.

Before you can take part in this research, I need to check that you understand:

a) What is involved and
b) How I will protect the information that you give me.

Please read and tick the following boxes.

	I have read and understood the information letter about this research project and understand my involvement.
	I understand that I can choose to withdraw myself & my data from this research project at any point and without needing to give a reason.
	I agree to inform the researcher if my contact details change over the course of the survey period.
	I agree that the data I provide may be used for this research project, which is investigating how people of several age groups look for information about the environment and recycling in their everyday lives.
	I agree that the interviews can be recorded.
	I understand that I may review the transcript of my interview and have access to an electronic copy of the completed thesis once the research is complete.
	I understand that my data will remain anonymous.

Name: Signature: Date:
Name of researcher: Janet Mawby Signature: Date:

If you have any questions or want to discuss the research further, please contact me:
Email – jam06@aber.ac.uk Telephone - 01970 622161 / 622188
Post - Janet Mawby, PhD Student, Department of Information Studies, Room 239, DIS Building, Llanbadarn Campus, Aberystwyth University, Aberystwyth, SY23 3AS.

Thank you very much for your help!

Appendix Three: Interview Schedule

Proposed Interview Schedule on environmental information seeking

INTERVIEW GUIDE (Version 1 10/5/10)

NB: Information sheet and informed consent form.

1. Would you like to start by telling me about your views on the environment and recycling?
• When you first started to think about it
• Has it meant any changes to your life?
• Try to find out about life circumstances

2. Since you have started to think about the environment and recycling, what has been your main concern?

3. When did you first look for information about environmental issues?
• What prompted you to start looking?
• Where did you turn for information?
• Are there particular people you turn to for information?
• Have you needed to look for different kinds of information at different times?

4. How easy have you found it to get information about the environment and recycling?
• Ways to identify and access sources of information (formal and informal)
• Interacting with the information sources
• Any problems?
• Does anyone else ever look out for information for you?

5. What have you tended to do with the information once you have found it?

6. Have you ever come across information unexpectedly?
• Try to get some examples
• How does it happen?
• How often does it happen?

7. Have you ever come across information that conflicted with what you thought or knew?
• Had you been given other information previously that disagreed?
• How did you decide what to believe?
• Try to think about media coverage if not already mentioned

8. Is there anything else you would like to tell me about?

9. Is there anything you would like to ask me about?

Appendix Four: Consent Form for Follow up Interview

Consent Form for Follow up Interview
Title of project: Information Seeking Behaviour Survey
Name of researcher: Janet Mawby
Project authority: This research project is being undertaken as part of a doctoral degree in Information Studies from Aberystwyth University.

I would like to interview you again in approximately a year's time. Before I can interview you again, I need to check that you understand:

a) What is involved and
b) How I will protect the information that you give me.

Please read and tick the following boxes.

	I have read and understood the information letter about this research project and understand my involvement.
	I understand that I can choose to withdraw myself & my data from this research project at any point and without needing to give a reason.
	I agree to provide contact details and inform the researcher if my contact details change over the course of the survey period.
	I agree that the data I provide may be used for this research project, which is investigating how people of several age groups look for information about the environment and recycling in their everyday lives.
	I agree that the interviewer can contact me again to arrange a follow up interview in approximately a year's time.
	I understand that my data will remain anonymous.

Name: Signature: Date:
Address / preferred contact details:

Name of researcher: Janet Mawby Signature: Date:

If you have any questions or want to discuss the research further, please contact me:
Email – jam06@aber.ac.uk Telephone - 01970 622161 / 622188
Post - Janet Mawby, PhD Student, Department of Information Studies, Room 239, DIS Building, Llanbadarn Campus, Aberystwyth University, Aberystwyth, SY23 3AS.

Thank you very much for your help!

Appendix Five: Questionnaire

The questionnaire is split into two sections – one containing personal information, for the purposes of analysing the details of those who have been interviewed and the main part of the questionnaire, which is the information being collected.
The two parts have a shared code number, which is kept confidential by the researcher.

Section One - Demographic information

Please state:

Your gender: male / female	Your age group				
	16 – 17	18 – 20	21 – 40	41 – 55	Over 55
Your employment status	Education / Working / Unwaged / Retired				
Your approximate annual household income	Under £20,000	£20,000 - £40,000	Over £40,000		

…….

Section Two - Investigation information

1. What do you do to look for information?	
2. What tools (things) do you use to look for information?	
3. How do you look for information?	
4. When do you look for information?	
5. Do other people have any influence on your information seeking habits?	

Thank you for assisting me in my research

Appendix Six: Ethics Approval Letter

PRIFYSGOL ABERYSTWYTH UNIVERSITY

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Ms Janet Mawby
Department of Information Studies
Llanbadarn Fawr
Aberystwyth
Ceredigion
SY23 3AS

2 August 2010

Dear Janet

Study title: Investigating Human Information Behaviour within Social Networks of the Families and Peer Groups.

Thank you for your email of 29 June 2010, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information has been considered on behalf of the Committee by the Chair, Professor Roger Earis

Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

With the Committee's best wishes for the success of this project

Yours sincerely

Clare Raw

Mrs Clare Raw
Secretary

Appendix Seven: Interview Transcript Excerpts

This Appendix contains excerpts from several of the interviews, P72, P72 and P94

R:	15.32	Fair enough, excellent. Ok, so one of the things that's coming through quite strongly, is that both you and [partner] are very keen on low impact living. So, has, has he influenced your behaviour towards, umm, recycling and your, and your information seeking and your environmental habits, or is it that you're both of the same opinion?
P72	16.00	We're both of the same opinion. I think it first started when I worked for WRAP, the Quango, and I got very interested in what they did, erm, and before, I probably hadn't even thought about it before that. I probably couldn't even put a date to it, but, erm, and so I was always into the reduce, reuse, recycle, from then…
R:		Uh huh.
P72		… from then, and that's like, maybe twelve years ago, maybe. Umm, and [partner], I don't think had really thought about it. I don't know, I don't think he had really thought about it all that much, but he was, he was a re-user, because he's just a practical person…
R:		Right.
P72		… and I think, together we got more interested and then when we came here, it was a bit easier, I think, because, it's, well, a, we had less money, umm, so on a purely practical level it makes more sense to have less, use less, reuse more…
R:	17.00	ok
P72	17.30 17.50 18.00	… umm, Aberystwyth err, is, quite far from anywhere, (laughs) so it's not like you can just pop to Ikea and buy a new chair, or whatever. You tend to think about where you can go more, also, I don't know, I think maybe, umm, maybe the sort of umm, I don't know, perhaps the fresh start of coming here made us think right, well this is where we do, you know, we do this more, we, you know, we try and live a lighter, lighter impact life. Umm, I, I don't know, and, we've, through it, we've influenced other people in the family, umm, into, just little things, like, not leaving stuff on standby overnight, and you know, try, we still haven't managed to convince our in-laws to not throw away masses of food at the end of every week, but you can't you know, do everything. Err, but we are, we are, I think we're better now, we're better since we moved to Wales and I don't know whether that's actually a Wales thing, or whether it's just that, because we changed our lifestyle by coming here, it became easier for us to do, …
R:	18.10	Hmmm.
P72	18.20	… umm, because after coming here, we then went to CAT, we lived, you know we rented for a year, and then we bought a house which was smaller and we had to think more carefully about how we lived, and like I said, lower income
R:		
P72	18.20	… umm, because after coming here, we then went to CAT, we lived, you know we rented for a year, and then we bought a house which was smaller and we had to think more carefully about how we lived, and like I said, lower income and err, and [partner] did this, this, sort

		of, sustainable, it was a sustainable architecture course that he did, but it, it had a lot of courses on things like energy saving and that kind of thing, so, err, I don't, I have no idea if I've answered your question.
R:	18.42	Yes, you have
P72		Ok, thank you
R:	18.45	(Both laugh)
P72		I'll stop, I'll stop wittering then
R:		No, no, that was great… I was letting you carry on, because …
P72		Yes, I was thinking I was doing it…[indistinct]
R:		… because you were giving me lots of really useful stuff there that I can…
P72		Yeah,
R:		… that I can perhaps come back to…
P72		I've never actually thought about that before, so…
R:		Oh, Good. (laughs) So, do any of your other family, they all live away from this area, don't they?
P72	19.00	Yes.
R:		Yes. Do you think any of them would be interested in being interviewed?
P72		Umm, I'm sure they would…
R:		Ok, I may, I may come back to you and ask you to introduce me, so's I could perhaps interview them by phone or by letter, or whatever would be comfortable for them……
P72	19.15	Ok

R		So, do you envisage that once with the kerbside recycling starts, presumably the glass will still go in there were the kerbside recycling bags will go in the kitchen?
P73		Yes well I'm not quite sure how it will work. Essentially in terms of storage I don't really know how it's going to work, until it actually happens.
R		Do you have concerns apart from the storage?
P73		No, not really.
R		Okay. So does your eldest son talk to your parents or his siblings or anyone else
P73		yes he will be quite proactive especially talking to the other two
R		So is that an older / younger thing going on then?
P73		Yes it's all about point scoring, as much as it's about commitment to recycling.
R		Okay when you're thinking about recycling, has the fact that your children are quite enthusiastic about recycling, has that made any difference to your views on recycling at all, or?
P73	12.44	Has it made any difference to my views? They've pulled me up once or twice when I've been a bit lazy, which is good. [laughs]
R		as long as you think that good [laughs] fair enough
P73		I think children should, should be encouraged if they're interested.
R		OK, so there have been occasions when you think ah I can't be

		bothered to put this and recycling or rinse it out or whatever, but, most of the time you think this should be recycled and you go and put it in the recycling bin, but sometimes you don't and when you don't they notice?
P73		most of the time I do it , but when I don't ...
R		They notice?
P73		... They notice. they let me know
R	13.29	OK. Erm... have they found out about recycling through you or are they aware of it from school?
P73		They, they get a fair amount of information from school. Certainly the school has been promoting recycling, I'm just trying to think, certainly since [child] was... at least the last ten years - so they've had recycling at that school for a very long time. I'm not sure if it's a feature of that particular school, but there's a strong commitment from parents, which has been going on for quite a long period of time. Initially the school was quite reluctant and the process was that the parents were quite proactive and then got the school on board, erm, with the issues and then they've, obviously, nowadays they've got to take them on board and, and they're quite proactive about it.
R	14.27	Excellent, ok. Fair enough. So parental, parental influence there has followed on to influence the school's policies? Ok, that interesting.
P73		Although, although think they would have got where they are now without … so that is where they are now
R		Yeah, but maybe they wouldn't have been quite so keen on doing it as quickly or as thoroughly. OK that's fair enough. It's interesting to know that, that you feel the parents have, have had an influence on the school by saying …
P73		Yes, certainly are now they forced to do anyway but such but 5, 6, 7, 10 years ago, then the main driver there would have been parental influence at that particular school.
R		OK. Smashing. Is there anything else that you can think of that, you know, to do with recycling and the environment..?
P73		I suppose, [coughs] you haven't asked about you know, people finding out about, I mean that's how, erm, what to do when you choose to recycle things. And there is also the other side, which is, which is you know, buying, the other side of the equation which is purchasing and then using recycled products.
R		Ok, so do you make an effort to, to use sustainable products?
P73		Yes, where I can, yes.
R		OK. So what sort of criteria do you look at when you're looking for sustainability?
P73	16.00	Erm, first, the first sort of thing is, is to look at products and, and purchase recycled where it's a fairly straightforward decision, and, and you know, the, the additional cost is reasonable.
R		OK so if the cost, if the cost's OK and it's fairly straightforward you're happy to use a sustainable product?
P73		Yes. That would be the preference.
R		Fair enough but if the product you need to buy is not coming from sustainable source or is ridiculously expensive *because* it's coming from a sustainable source you would go for the cheaper option?

P73	16.30	[pause] If it is, if the price difference becomes too large then it, then it becomes too large to be able to afford to purchase it.
R		No, no…
P73		There are certain things I wouldn't purchase, regardless of cost
R		OK
P73		A specific instance is wood that came from non sustainable forestry. I wouldn't purchase that.

R	Okay, so how easy few found it to get information if you needed, if you needed information about an obscure item, for example, hold you go about getting information about could you recycle it and where would you recycle it etc.?
P94	Well, to be honest, it sounds awful, but I would just go to Wikipedia, it's all on there.
R	Cool.
P94	And if it is not on the, it will show you where you can find the information and channel you in the right direction.
R	OK. Do you kind of use Wikipedia as a starting point and if the information isn't there …?
P94	Or if it looks a bit suspect. Because Wikipedia can be a bit tricky.
R	Alright, so if you don't completely trust Wikipedia, you would look for an alternative source to back up what Wikipedia said if you weren't sure?
P94	Yes.
R	Cool, cool.
P94	Well, probably not if it looked sensible but,
R	Yes. But you're making a rational decision about that looks sensible that's what I'll do?
P94	Yes.
R	As opposed to, not sure about that I will check that on another source. Do you use any other, kind of starting point apart from Wikipedia?
P94	Erm, no not really. I chuck things into Google, see what they have.
R	The vast majority of people tend to use Google as a starting point, which is why I was interested that you said you tend to start with Wikipedia. So that's interesting.
P94	It is normally, because if you search in Google, Wikipedia is one of the first pages that comes up, isn't it?
R	So you might as well go direct?
P94	Yes. Skip a step.
R	Okay, if what you're looking for didn't come up of Wikipedia or Google, what other sources would you use?
P94	I would probably either go down to the recycling centre where I used to work and ask them, because the sort of know the boss. Already have to wait, wait until I went down to the [Buddha field] festival and ask there. With that kind of festival, there are a lot of people there that are heavily involved in the green movement, and so have looked into it further than I have.

Appendix Eight: Attitudes to Recycling

A8.1 Recycling

This study was focussed on information seeking and the environment, so the interview questions asked were about this topic. The preliminary interview questions were designed to help put participants at ease. Asking if they recycled and what items they recycled was a good way to achieve this. Everyone interviewed for the study undertook recycling to some extent, as the council had recently introduced a new kerbside recycling collection just prior to the start of the interviewing process.

A8.1.1 Recyclable items

This level of coding was used to separate the items people discussed and the associations they had with these items, which had in many cases previously been viewed as rubbish rather than as recyclable materials.
Items mentioned during interviews included:

- Cardboard
- Paper and newspapers
- Plastics – drinks bottles, takeaway containers, carrier bags
- Packaging
- Glass
- Tyres
- Garden waste
- Tins and cans
- Batteries, ink cartridges and electrical items
- Clothing and textiles
- Tetrapaks and cartons
- Furniture and household items

A8.1.2 Non-recyclable items

Equally, some participants mentioned items which they were unsure if they could recycle, including:

- Polystyrene
- Wood
- Metal
- Cat Litter
- Nappies
- Old electrical appliances / white goods
- Old furniture
- Sanitary products

A8.1.3 Non-recycling places

Places mentioned within interviews where participants did not think it would be suitable to seek recycling information (but were mentioned as places where recycling points were located) are shown in the following list:

- Morrisons
- Public houses
- Pub car parks
- Surrounding farms
- Village shop
- Local school
- Town and village names

A8.1.4 Ease of Recycling

Due to the recent introduction of the new recycling scheme, in which the weekly refuse collection was replaced by a fortnightly refuse collection and weekly food/compost waste and recycling collections, several participants suggested that it was more beneficial to recycle as the items were disposed of more quickly. P105 summed up how several participants, including P75, P79, P80 and P83, felt.

> "Well, because if you don't recycle you'd have more rubbish and as they only collect every fortnight, that means rubbish is piling up, like with the recycling, every week, you get rid of things quicker. So I just think it's easier to recycle, isn't it?" (P105)

Another participant suggested that the new scheme was easy to follow:

> We are lucky because everything that is recyclable, apart from food, goes in one bag so it doesn't matter, paper, cans whatever you can put it one bag, then the non-recyclable stuff goes in another bag and then you've got your green stuff. *"* (P85)

Glass recycling was a particular issue that many participants were unhappy about with the new kerbside system. (See also Section 6.2, where attitude to this issue is covered.) Prior to the introduction of the kerbside recycling scheme, all recycling had to be taken to a central recycling point, under the new system, all recyclable materials could be placed in a single clear plastic bag, supplied by the council, with the exception of glass or textile items. These still needed to be recycled at a separate recycling point. (It should be noted that several new glass recycling points were placed on housing estates and larger glass recycling points replaced the previous all-purpose central recycling points.) Several of the participants complained about not being able to put glass into the recycling bags and having to make a special effort to take their glass to be recycled. One household (P79, P80, P81, P82) actually had a new glass recycling point within a hundred metres of their home, but were still unhappy about the effort involved! P95's household, however, lives in a village with no local glass recycling, so her household places the glass in the black bags as they do not usually have access to a car to enable them to recycle glass. P95 said that she would recycle her glass if she or her children were able to walk to a recycling point. P85 said *"I think it needs to be made easier for people to recycle."* It should be noted that none of the participants mentioned the difficulty of textile recycling.

A8.2 Attitude to Recycling

Everyone interviewed for the study recycled in some ways – varying from those who reluctantly do it because they felt they must, to those at the other end of the scale that go the extra mile to recycle absolutely everything they can.

- One participant takes in other people's newspapers to use on their wood-burner and gives their own recycling to a friend who is already having kerbside recycling collections, whilst another goes as far as taking an empty suitcase away with them when visiting relatives whose local recycling does not cater for certain items in which to bring home this recycling.
- At the reluctant recycler's end of the scale, several participants were unhappy about the changes to the refuse collection service, which was formerly a weekly collection, but has now changed to a fortnightly one, with recycling and food waste being maintained as weekly collections.

Both P75 and P108 complained that if they did not recycle, their refuse bin would overflow. Several study participants mentioned that it was inconvenient to have to take their glass recycling themselves to a recycling point – particularly as all other recyclable materials were now collected from their doorstep. All participants in the study except P95 did actually take their glass to be recycled, but all complained about this to a degree. P107 described glass recycling as being a

> "Bit of a bane really in our lives, because we used to do plastic and glass and now there's the free kerbside collection and that was a big chore, thankfully it's reduced, but then, almost, because it's just glass, it almost seems worse, because well, if everything else is being taken, then it tends to get put off and put off, but we do do it."

P81 had a similar attitude to glass recycling: ''*Bit of a bugbear as far as glass is concerned, because you've got to take it down to Morrisons – they don't collect it.*

Every other county, they collect glass as well – just ours." Another participant, P77, whose household does not have a car, has to use a taxi to do their glass recycling and said it is occasionally somewhat embarrassing when they call a taxi to go to do their shopping and first fill the boot with all their empties to be deposited at the glass recycling bank at the supermarket!

P90 stated that they would take their glass to a place where they could do more than just glass recycling:

> "Normally, I would take them somewhere easy, sounds awful, but like Morrisons because they have a book bank thing and I'm in Morrisons, and obviously the bottle bank. They have the clothes thing there and it's easy because I am there and so then I am only using one [journey] and it's somewhere where I am getting petrol or – it's convenient."

At the time of the interview cycle, the new recycling system was still being introduced across the county and P72 was looking forward to the implementation of the new food waste system: *"I don't have, I don't have anywhere that I can put things like, you know, food waste, so finally getting that would be really good."*

P107 felt that recycling could seem to be a

> "… very technical exercise, [… and that] maybe, the key to recycling is actually that it needs to be, to have some sort of cultural veiling. We have to transform things, ultimately from true product, in input, output waste, into things that have meaning, and circulate and have currency."

A8.2.1 Waste and balance between viability, time and actions

P87 suggested that an effort assessment was involved and that recycling was an ongoing activity whenever someone from the household was likely to be passing a recycling point for glass or newspapers:

> "You've got to balance out the amount of effort involved with doing the right thing and also thinking sensibly as I'm sure that one thing about recycling is I know I've come across the odd occasion, I can't quote specific examples, but somebody might say I'll go and recycle this, drive about ten miles and drop off half a dozen bottles or something ridiculous like that so you've always got to bear that in mind if you need to make a special journey to recycle in a vehicle. You could walk to do it. […] I always take bottles and papers anyway because the Council don't provide services for that, so bottles and papers end up in the recycling banks which are all over the place."

In addition to the effort assessment in actually taking items that are not collected in the kerbside scheme, participants had to decide how much effort to make in deciding if an item was suitable for the kerbside bags. As the scheme was new, many items that had previously just been put in the black bag now needed to be considered for the correct refuse bin. Attitudes ranged from putting anything in if the participant thought it would be ok, to just putting it in the black bag as they were not prepared to make the effort to find out if it could be recycled. P98 and P102 summed up the former, P101 the latter position:

- P98: There's information too on the packets and things if it happened to be a packaging thing. To see if it's recyclable or not. Sometimes it says "some areas" and you can't tell. Actually, if I think they'll do it, I put it in the recycling and the sorters would know.
- P102: "I put it in the recycling bag, because I figure they have to sort it between the plastics and the cardboard and everything, so they can just take it out if they don't want it."
- P101: I'd just put it in the black bag.

The middle ground was occupied by P71 and P105, who put items to one side until they were passing or going to the municipal depot, where they would ask about the

items, in order to know for the next time. At the enthusiastic recycler end of the scale, P89 maintains a separate bin in her kitchen for items that she knows could be recycled at the recycling depot, but that would be rejected by the sorters at the recycling plant and would possibly therefore end up still in landfill.

One participant, whist a very keen environmental supporter, was sceptical about the council's attitude to recycling.

> "I'm really, I'm more dubious about council recycling than I was, because a lot of it, well, it's sold to us and environmental thing, and while it's good for the environment, really they only collect recycling when money can be made. Whereas we are told that things like polystyrene that aren't recyclable. They are, but it's just not economic to do it, so the council don't do it because it would cost them money. And when we are paying for pick-ups, it seems a bit wrong." (P94)

P89 voiced similar opinions about the new scheme, and although pleased it was being implemented, she expressed the opinion that it might be solely due to forthcoming legislation, recalling a meeting she had attended at which a council presenter had said the council is only permitted to collect a certain volume of waste by a certain date and that this scheme should enable the council to meet the targets set by WAG.

> "Actually, I think the Council are now doing this because they have to. […] I personally I am quite cynical as to why the Council are doing it. They weren't doing it to any great extent prior to that. They weren't advanced like in Germany where they were doing it anyway; they had to wait for some legislation to force them to do it."

P92 was also very cynical apropos the recycling scheme now in place:

> "… one hears these funny rumours. I don't know if it's absolutely true. Something to the effect, that it's the recycling that's collected that they take the benefit from, then they don't have to pay the fine, if they collect it. It's not actually what's dumped in the landfill; it's what we collect for recycling. And whatever happens to that material after you've collected it has no effect. I don't know if that's true or not, but it's certainly something that once again, should be established and made clear to everybody."

P88 has a set of concerns regarding the workplace and issues such as travel, corporate recycling and general wastefulness which ultimately costs the clients of the industry in financial terms. She is responsible for training materials and often has leftover packs which are not re-usable due to information changing before the next course. Whilst reluctant to just recycle the papers involved, she is aware of the time and effort involved in removing things like evaluation forms and cardboard folders that do not change and can therefore be re-used. She is also concerned about unnecessary travelling, as her organisation is spread over a series of locations and she regularly has to attend meetings. She felt that lift-sharing and video conferencing were underused solutions which could save her company, and ultimately the environment in terms of resource costs and emissions.

A8.2.2 Lifestyle Choices

The study participants all have individual lifestyles and choose how environmentally friendly they want those lifestyles to be. This was not a main theme of the research, but was discussed by several of the participants. A selection of lifestyle choice measures are shown below.

- P77 worries that her current living location makes it hard for her to pursue her environmental ideals as the logistics of ethical shopping are too difficult. P85 is concerned about levels of packaging and tries to buy in bulk to save on packaging when possible. P77, P99 and P107 also consider the volume of packaging when making food and household purchases.

- P84 is very concerned about energy wastage and will go and close an open microwave door if it has been left open by a co-worker, as well as reminding people that double-sided printing is better for the environment.
- P93, P98 and P100 will all remind people gently to recycle if they spot them putting recyclable items into the wrong bin.
- P89 has a separate bin for items not suitable for the new recycling scheme bags, but that can be recycled at the municipal waste centre and periodically has a relative take these things to the site, rather than send them to landfill. P89 also tries not to purchase battery powered items as the chemicals are not readily recyclable and is concerned about food miles and over-packaging of food.
- P77, P89 and P107 make a conscious effort to use local producers and where this is not possible, will make a choice in the supermarket about the distance food has travelled and whether it is fairly traded when making their purchases.
- In Ceredigion, (as in all of Wales,) retailers are obliged by law to charge for plastic bags, so several participants mentioned that they re-use carrier bags, although P71 mentioned that sometimes she will just buy a bag if she goes to the supermarket without one after college.
- P96 and P78 / P76 have primary school aged children to whom they are trying to set a good example in the recycling arena, as their children are all being taught about sustainability, fair trade and the re-use and recycle ethic at school.
- P87 and P97 both recycled components or repaired old items to create new ones. P100 stated that both her parents also do this, in various ways.
- P89 and P99 worry about convenience foods and prefer to make their own food from fresh, local produce and wholefoods.
- P107 is interested in embracing the ethos of the Voluntary Simplicity Movement.
- P76, P78, P85, P86, P102, P107 and P108 all grow some of their own food, with some of these participants also having chickens for household egg consumption. P107 and P108 were also using gardening to teach their children about food production.
- All the study participants who had young children recycled clothing, books and toys to friends and family with younger or smaller children. P96 summed up this ethos with the following comment: *"We help other people out, people have helped us out. So it is a good natural cycle."*

P107 felt strongly that a child's item given to a friend with younger children than her own as well as being a commodity, gains status as a gift commodity, inspiring others to pass this on after they have finished using it, to others who can continue to get use from the item. P107 suggested that *"… suddenly it's not a cold, alienated commodity anymore; it's an object with meaning."*

A8.2.3 Green or Sustainability issues raised

When asking about general environmental issues, many participants were concerned about waste, landfill, sustainability and global warming. Participants talked about a variety of measures they take in order to consume less energy or waste fewer items, including

- Walking or cycling when possible, instead of using a car

- Trying to use public transport instead of private vehicles
- Turning off lights when leaving a room
- Using energy saving bulbs
- Only boiling the amount of water required when using a kettle
- Re-using carrier bags – often until they fall apart
- Purchasing second-hand items from charity shops in order to re-use things or to save manufacturing costs
- Considering where an item was coming from – carbon footprint issues
- Repairing things rather than buying new
- Recycling as many materials as possible
- Printing double-sided to save paper
- Installing a wood burner stove to reduce oil consumption
- Increasing and updating household insulation levels to ensure no energy wastage
- Re-using items for a new purpose rather than sending them to landfill

Some of the items mentioned were partly for the sake of the environment and partly for monetary reasons. However, since most of those who purchased items at charity shops also donate items for no financial gain, it may be inferred that there is more concern for saving the environment by reducing landfill than for saving pounds. This was confirmed by several participants, including P78, P77, P87, P88, P97, P98, P107, and P105, who all stated their preference for seeing things being reused by someone new rather than thrown into landfill.

- "I do, we do try to use things that are second hand. […] Whether that is for environmental reasons or for monetary reasons I don't know. It's partly environmental I think. To save waste. I mean we certainly try to pass things on rather than ditching them." (P78)
- "I do try and recycle clothing," (P77)

P75, who is a regular traveller for work said *"I very rarely use public transport for work because you can't get anywhere."* P75 went on to mention that several meetings had been missed in the past, due to having to rely on public transport and as a result P75 preferred to hire a car when travelling. *"Yes, it probably is a bit more expensive to hire a car, but then I haven't got the hassle as well, of trains not turning up on time or getting to and from the station."* When discussing this issue further, P75 expressed the opinion that it would be better for the environment to use public transport, but that from rural Wales, this was often not viable, as the trains/buses were infrequent, unreliable and often it was completely impossible to get where you needed to go unless you hire a car.

P92 expressed the opinion that she was unsure whether global warming was a man-made issue or was a natural cycle that was potentially being exacerbated by humankind. P71 was concerned about the effects of global warming on endangered wildlife, while P105 worried more on a local level about these effects due to construction and depletion of local woodlands.

A8.2.4 Reusable items and second hand items – perceptions

Participants in the study had a variety of attitudes towards reusing items – whether for their original or a new purpose. Examples of items that participants in the study had reused included newspapers, carrier bags, plastic takeaway containers, children's toys, books, clothes, and in one case old wooden pallets.

- P72 recycled newspapers and carrier bags within the village. This was because the newspapers had been recycled as a fundraising effort for the village school and the

carrier bags were reused by the village shop, which helped to keep prices lower as the village shop proprietor didn't need to purchase new carrier bags for customers, as *"… local people bring them old carrier bags from when they fail to bring their jute bags or whatever, to [supermarkets in town] and they give them to people for their shopping."* (P72).

- P95 reused the plastic takeaway containers for cooling used cooking oil to avoid putting the oil down the sink. The oil was then put into the food waste once it was cool.
- P107 both recycles and purchases used toys for children, stating *"… we tend to redistribute [daughter's] old toys around and what have you. We tend to pick up old toys. I think recycling with children is really important, because things are so short lived aren't they? Children get bored with them so quickly."*
- P76 mentioned taking items to charity shops and various schemes the children's school undertakes: *"I am always recycling clothes in the sense that we take them to charity shops or pass them on to friends. And they have various schemes at school 'Bags 2 School' I think it's called. They're pulling in things from people as well."*

P78 was very concerned with things being wasted while there was still life in them and said that their household reuses and passes items on when their household has no further use for them.

> "We do try to use things that are second hand, yeah we do indeed. Whether that is for environmental reasons or for monetary reasons I don't know. It's partly environmental I think. To save waste. I mean we certainly try to pass things on rather than ditching them. I hate to chuck stuff and so does the family. We tend to pass things on to charity shops or people like CRAFT who restore and sell on. We certainly try to save wastage in that respect. […] By trying to reduce the consumption of new stuff and by passing on reduce other people's consumption of new stuff, therefore, reduce energy use and so on and resources."

P94 echoed these views, saying *"When we can we always try and reuse things. Reuse is much better than recycling them."*

P105 and P71, a parent and child who were interviewed together, initially said they did not buy items second hand from charity outlets or car boot sales, but then P105 (the parent) clarified

> "I wouldn't like, not buy it just because it was in a charity shop. If something caught my eye, and I thought it was nice, I would. I wouldn't not buy it. You know, I wouldn't think oh, I can't buy that it's second-hand. I would buy it. I have bought second-hand things. Children's stuff, especially, like, when they were little. I had a second-hand high chair and things like that. I just don't tend to go shopping in the charity shops."

P71 and P105 went on to discuss buying second hand books and P71 said *"If I wanted to get a book on the internet, I'd get a used one."* P105 also mentioned purchasing second hand items from eBay, which was potentially perceived as different to purchasing from charity shops.

- *"*And actually, eBay, that's like second-hand stuff, so yes, I do buy second-hand stuff. But maybe not necessarily in the charity shops, but I look on eBay for things. Which is just the same kind of thing – instead of going into the shop; you're just buying it direct from whoever. That person hasn't taken it to the shop, so it's like that, isn't it?"
- *"*I try not to throw things and use them and get them mended for as long as possible and it irritates me if you can't get them mended." (P77)
- "So far if I've had anything like that it's been reusable I've actually given it to somebody." (P85)

P77, P85, P86 and P87 were all from the over 55 generation and all shared a belief that things should be mended if possible, before being thrown away. P89 and P94,

from the middle generation shared these views. P86 suggested that this view had been prevalent for a long time:

> "We've always recycled, I mean ancient man when he was making stone tools, even though I believe it was the fashion to make a fresh one every time because they didn't hold their edge very well but he didn't chuck the old one away necessarily, but he thought I can get another edge out of that one."

A8.2.5 Perception of other's views on recycling or sustainability

One participant felt that under the new waste system, people were now more aware of recycling and more inclined to actually recycle, due in part to the lists on the recycling bags and in part to the fact that recycling is collected weekly, so if an item of waste can be recycled it will be collected more quickly that if it is placed in the household waste which is only taken every two weeks*. "People moan about it but I think it is quite a good thing because it reduces the amount of rubbish that people use in the first place. At least, it ought to."* (P86)

Several participants described family members, friends and colleagues who were knowledgeable about the environment and green issues in general:

- P88 and P89 both described having *"green minded"* friends.
- P107 says she has *"…certain colleagues who seem to be in the know"* environmentally.
- P77 has colleagues who are *"… very committed to the environment."*
- P78 has a family member who has a Master's Degree in an environmental subject.

These personal contacts were perceived to know about recycling and the environment and to be trustable sources of information. P78 stated

> "That is where I get my information, for instance, that's the kind of person I get information from, if he believes a certain thing then I am more inclined to believe it because he's researched those things."

P74 at the time of interview was an engineer working in the Ceredigion area. The perception she had of her colleagues was that their views on the environment as far as their work was concerned were different according to the colleagues' age.

> "You tend to find it's an age thing. There are some […] engineers out there who are approaching retirement and they have a view which is that they're looking at the finish line of 65 and retirement. They're not particularly interested in what happens beyond that … [because] somebody else will be doing it. It tends to be the younger generation, […] who are picking up the baton and running with it. But, there's the realisation that there's still some way to go."

P74 went on to say that discussion at break times differed depending on the age of the colleagues too, with younger colleagues more likely to be interested in talking about new innovations than older colleagues.

P78 when discussing other family members, perceived the children to only be interested up to a certain point in the environment and taking care to conserve energy.

> "Kids hear the theory at school and they are real little, what's the word, not converts but real enthusiasts because they are newly converted from school but in practice, they don't carry it through to practice very easily, you know they don't really switch lights on and off or let taps with run or whatever, they don't follow it through to practice."

P78's partner (P74) was considered by P78 as *"… doesn't seem to be in practice as concerned as I am, in a tiny way, saving energy and being green, recycling etc. […] doesn't appear to be, but that doesn't affect me I just go on in my own way."*
P78 has encountered one or two tradespeople whose views on environmental and recycling, particularly of energy, in her opinion, are "remarkably behind", whilst others are more sensitive to the issues, but perhaps only as a money making system, or a way of accessing a particular market, rather than for the sake of environment.
P85 had concerns about how certain goods and services were portrayed and suggested that some companies projected an image as regards environmental issues, rather than actually adhered to their own ethos in some cases. Whilst she did not mention specific companies, it was clear that the view was of larger companies cynically exploiting the unaware public.

> "I must admit, I tend to think, I can't think of any particular exceptions but I do tend to think that companies all sort of play at looking after the environment and all that, and I take it all with a big packet of salt." (P85)

P85 felt that the "throwaway" society had evolved from retailers trying to make it easier for consumers to buy goods without having to consider the consequences of the packaging of the goods. She referred to the past, where you took your own containers to be filled at the grocers and returned empty glass bottles to get your deposit back on them. She suggested that people would return to this type of behaviour if it was introduced, as people always had done in the past.

> "The consumer will put up with whatever they have to because they used to in the past. There's no reason they can't. If they are going to go away with a car full of stuff there is no reason why they can't bring back the empties. […]If people know that they the only way they can they take bottles out is to take their bottles back to the supermarket, they will soon start doing it." (P85)

P86 was concerned that more people were not already dealing with their own food waste. She felt that the council should not need to be spending resources on this, as *"To be honest with you, I do think they should be doing that, if people aren't doing their own it's a disgrace!"*

A8.3 Ease of Information on recycling

A8.3.1 Information Ease

P86's reply when asked how easy she found it to get information about recycling and the environment and sustainability, was that it was *"Reasonably easy. It's easy enough to know the places to get the information from."* This reply was typical of the study participants' views on how easy it was to obtain information on recycling. This may have been in part due to the changes that were taking place at the same time as the interview cycle – all but one[6] participant had very recently received information on the new recycling scheme. P89 commented on how easy it was to get recycling information due to having received the leaflet:

> "Now that they've done the new scheme it is easier because they did send round that leaflet when they changed the dates over and introduced the weekly recycling and the fortnightly black bag."

P93 added *"I don't think it's difficult to get information if you really want to find it."* Study participants mentioned using the council website and the internet in addition to

[6] This participant worked in Ceredigion, but lived in Powys.

the leaflets about the new scheme. P77 discussed that she had come across the retailers battery recycling scheme, having *"… noticed that they had a recycling scheme there and you could get a bag and put your batteries in it."* P105 checks packaging to decide in which bin an item should be placed: *"…most cartons and what not have on them whether they are recyclable or not."*
There is still an issue of ease of access of information – if it is difficult to access information, people stop searching when they achieve the lowest level of sufficiency. If information was readily and easily available, participants searched more thoroughly and fully. This in turn impacts upon people's everyday behaviour – if information about what may be recycled or how it may be recycled is not easily available, people simply put the item under investigation into their landfill refuse.

A8.3.2 Council website

As covered in Section 4.5 above, 31.57% of participants in this study used the Ceredigion Council website as an information source when attempting to find information about what, where and how to recycle material. P85 said that the recycling information is

> "… available on the website in full. It didn't cover everything in the leaflet that they gave us. There are some things where you have to look - you can recycle the film but the container itself isn't, or something, so it's all very complicated."

Several other participants (P72, P100 and P106) stated that it was difficult to find recycling information easily on the council website. P72 said that although the internet was an easy information source to use, *"Ceredigion's website is not always very friendly, erm, it can be quite difficult and quite laborious to find things, but generally speaking, most of the information's there."* P100 described using the council website as *"No, that's not the easiest of things, actually. That might be lacking a tiny bit."* P106 found that finding recycling information was *"Not that easy, really. I could go on the council website. It wasn't obvious what you could and couldn't recycle]."* P106 went on to say that their household had used paper materials sent out by the council after the start of the new scheme, which were more useful than the council website.
P99 suggested that the council website was only useful for finding out the telephone numbers of the appropriate person or department to contact, but otherwise was essentially useless.

> "I mean the internet was only good for getting the telephone numbers, just to get hold of the council. There wasn't any other information there, aside from the number."

P77 also had difficulty obtaining information from the council website – her search was about tetrapaks:

> "I looked at it was because I am always unsure whether the tetrapak things should be included or not. And I don't think the information is that good because, or maybe I am trying to ignore that information so I just put them in anyway."

Thus people often used alternative or additional resources to get the required information. These resources included using the contact information to telephone council staff, as well as using different websites, offline resources or asking people the participants considered knowledgeable in the area of recycling. P100 stated that information had come from several different sources

> "A lot of it I've got from family and friends. […] I found out from my Mum in the end, but it was more from asking people that I know but it would be better if it said clearly on the bag, you know."

A8.3.3 Internet generally

35 of the 38 participants used the internet and said they found it easy to locate the information they required. Three Generation 1 participants confessed that they do not use the internet – they ask their partners if they need information from the internet.

P108 discussed doing all the household purchasing research online – even down to using Which? online and having forgotten that this was an actual print publication. A selection of replies to questions about how easy people found it to get information from the internet are shown below:

- P72 "I find the internet quite easy."
- P80 "…the information's there that you need."
- P86 "Reasonably easy. It's easy enough to know the places to get the information from. […] As you can imagine there are websites where there are vast quantities of it. […] In fact if anything there is too much information. If you read half a dozen gardening books they all contradict one another. There is too [much] folklore but not enough basic, simple straightforward science on it."

P104 also discussed the amount of information that was available and described having actually unsubscribed from one mailing list after being bombarded with an excess of information.

A8.3.4 Difficulty of getting info on recycling

Several participants said that they had found it difficult to get information about recycling until they received the documentation from the council about the new scheme. This comment from P89, who was already a keen recycler, is typical: *"Until then* [when she received a leaflet about new scheme] *it was a little bit awkward sometimes trying to find out things."* As mentioned previously, all participants seemed happy with the new scheme and the information provided.

Several participants had had problems trying to find information about how to recycle specific, common items, including tetrapaks, polystyrene, cling-film, kitchen foil and pill packet blister packs. The participants that mentioned these items eventually decided either to just put them in household waste or to risk putting them in the recycling bag if they had been unable to find out if they could be recycled. The decision was made on the basis that the sorters would remove the items if not and it was better to send them there than to landfill if they were recyclable. P81 was the exception to this, saying that she looked

> "First on the leaflet. If it's not on the leaflet, tend to just put it in the household bin. I wouldn't know where to go to get the information. […] I've tried, like I said, ringing the council, but the number it gives you on the recycling leaflet, nobody ever answers the phone."

Tetrapaks were a particular issue for several participants. P75, P84 and P89 all mentioned that they took their tetrapaks to be recycled when they took their glass, usually prior to doing their supermarket shopping. P108 was just not prepared to take them to a recycling centre, since the tetrapak recycling point had a notice which said only certain types of tetrapak were recyclable, *"… and it wasn't very clear which ones could be, so the thought of taking my tetrapaks there when I wasn't sure if they were the right tetrapaks anyway, wasn't happening."* P100 typified the process that most people used to try to get the information about these specific items, in this case, tin foil:

> "I wasn't sure if that could go in or not. I wasn't sure where to get that information from then. I found out from my Mum in the end, but it was more from asking people that I know but it would be better if it said clearly on the bag, you know."

It can be seen from the examples above that the information provided at the start of the new scheme covered most general recycling items, but that it was more difficult to obtain information about specific items.

A8.4 Summary

This chapter has analysed the data about recycling that was yielded from the interviews. Questions were asked pertaining to recycling and the participants' attitudes to recycling and getting information about recycling and environmental issues.

In response to the preliminary questions about recycling, participants discussed a range of items that they considered suitable either to be recycled or not recycled and places where they could go to do recycling, but would not necessarily expect to find recycling information.

As the newly introduced refuse and recycling scheme was changing the collection frequency, several participants who had not previously recycled were now doing some recycling, as they felt it was more beneficial to recycle as the items were disposed of more quickly. One participant suggested that people were now more aware of items that could be recycled, due to the lists of acceptable items on the recycling bags. Glass and textiles are now the only recycling materials that are not collected by the new kerbside scheme and despite the fact that this had not changed, several participants did not like having to recycle their glass separately to the rest of their recycling. It was suggested that an effort assessment was involved and that recycling was an ongoing activity whenever someone from the household was likely to be passing a recycling point for glass, textiles or newspapers.

All study participants recycled in some way – at one end of the scale reluctantly because they felt they must, and at the other recycling absolutely everything possible.

Participants had to decide how much effort to make in deciding if items were suitable for the kerbside bags. Some participants put items into the recycling bag if they thought they were recyclable, while others put things in the landfill bag if unsure.

Although most participants seemed pleased that more was being done to collect recyclate, concerns were voiced by a few participants that the council was only changing the refuse system due to EU legislation, to meet targets and avoid fines on landfill collection quotas.

The study participants all have individual lifestyles and choose how environmentally friendly they want those lifestyles to be. They also all had various concerns about energy use and wastage, recycling, re-using of items, food miles and supporting local and fair trade producers. Participants discussed measures that they took to "do their bit" for the environment, based on these concerns.

Although almost a third of participants had used the council's website to find recycling information, a quarter of these website users said it was difficult to navigate or obtain the required information, while only one participant commented that the information was there in full. This differed from their usual internet experience, as all the participants in the study who used the internet reported that they usually had no difficulty finding information online.

Appendix Nine: Code Book

Name	Description	Notes
Attitude to Recycling	What the participants described feeling about recycling in general	(Added 15/8/12)
Lifestyle choices	To reflect the areas beyond recycling where ethics and ecological ideals come in.	(Added 22/10/12)
Re-use and buying from charity outlets	What the participants described feeling about their use of charity and second hand outlets	
Waste and balance between viability, time and actions	What the participants described feeling about their recycling behaviour and how much effort they were prepared to make to actually recycle / get information about recycling	
Green or sustainability issues raised	What the participants described feeling about the environment and any green issues raised	
Re-usable items	Items that can be re-used and how this is achieved	This code is more to do with attitude toward re-use of items that would possibly otherwise end up in landfill
Disposable information and value of information	Newly discovered type of information (see Mawby, Foster and Ellis, 2015.) Disposable information is exactly what it sounds like – information that is used once and then discarded. People place different values on information based upon their expectations of its future use to them.	(Added 14/9/12)
Ease of information on recycling	How easy the participants found it to obtain information on recycling from any sources	
Information ease – council website	How easy the participants found it to obtain information on recycling from the council's website	
Information ease – internet generally	How easy the participants found it to obtain information on recycling from the internet in general	
Ease of recycling	How easy the participants found it to actually do their recycling	
Difficulty recycling	How difficult the participants found it to actually do	This mostly seemed to apply to glass recycling, as with the

	their recycling	new kerbside collection scheme, most participants were happy that all the rest of their recycling was now collected weekly from their doorstep.
Influenced	The things and people that had an influence on the participants and their information seeking	
Influencing others	How the participants felt they influenced others	
Information seeking habits	How the participants sought information	Specifically their usual habits and preferred ways to obtain information.
Information needs	How the participants recognised their information needs	
Passive information seeking or receiving	How the participants "absorbed" information whilst not actively seeking information	Added 24/10/12. Several participants mentioned just taking in information from various places, even when not actively looking to obtain information
Prior knowledge	Knowledge the participants already have and know they have	
Serendipitous information	Information received in an accidental fashion, sometimes whilst looking for other information, sometimes whilst not actively seeking information	
Trust of information source	What the participants described feeling about particular information sources	If a participant did not trust an information source, they either did not use the information from it or sought additional verification of the information
Information seeking habit changes	Changes in how the participants sought information	This code was derived at the start of the study, when it was anticipated that longitudinal interviews with individual participants would be possible and that individual behaviour changes would potentially be observed. Ultimately, this code considered the differences in information seeking habits between the generations.
Information dissemination	How people use and pass on the information they have received	
Information needs perceptions	What the participants described feeling about their information needs	
Information sources	The types of information sources used	
Documents	These ranged from newspaper and journal articles to food packaging and the recycling bag and leaflets from the council	

Email and electronic information	Mainly emails, but included forums and social media	
Media	TV and radio programmes	
People	Any person to whom a participant turned to get information	
Peer networks		
People as information sources - attitude	This code explored the trust issues involved in who participants would ask for information	
Places (including Recycling places and non recycling places – both originally separate codes)	Locations mentioned during interview process. (Mainly where people go to engage in recycling activities.)	Recycling places include: Charity shops, Glass recycling bank, Paper banks, The tip / recycling centre / dump. Non recycling places tended not to be specifically mentioned as this study focused on recycling activity or information seeking pertaining to recycling and green issues.
Websites	Websites mentioned in interviews	
Information use	How the participants used the information they had gathered	
Non recyclable items	Items mentioned in the interviews that could not be recycled	
Perception of others' views on recycling or sustainability	What the participants described feeling about other people and their recycling	
Recyclable items	This code was used in the preliminary analysis to describe the items mentioned by participants as being recyclable.	Items mentioned included: Batteries and Electricals, Cartons, Clothes and Textiles, Furniture or household items, Garden and food waste, Glass, Papers, Plastics, Tins and cans.

Coding levels changed slightly from the initial analysis:

- Information seeking habit changes became a secondary level code, within Information seeking habits.
- Recycling places and Non-recycling places were combined with "places" in the Information sources code.
- Green or sustainability issues raised and Reusable items and second hand items – perceptions were made secondary level codes within Attitude to Recycling.

Information ease – council website and information ease – general internet were made secondary levels within the Ease of information on recycling code.

Appendix Ten: Relationship Diagrams

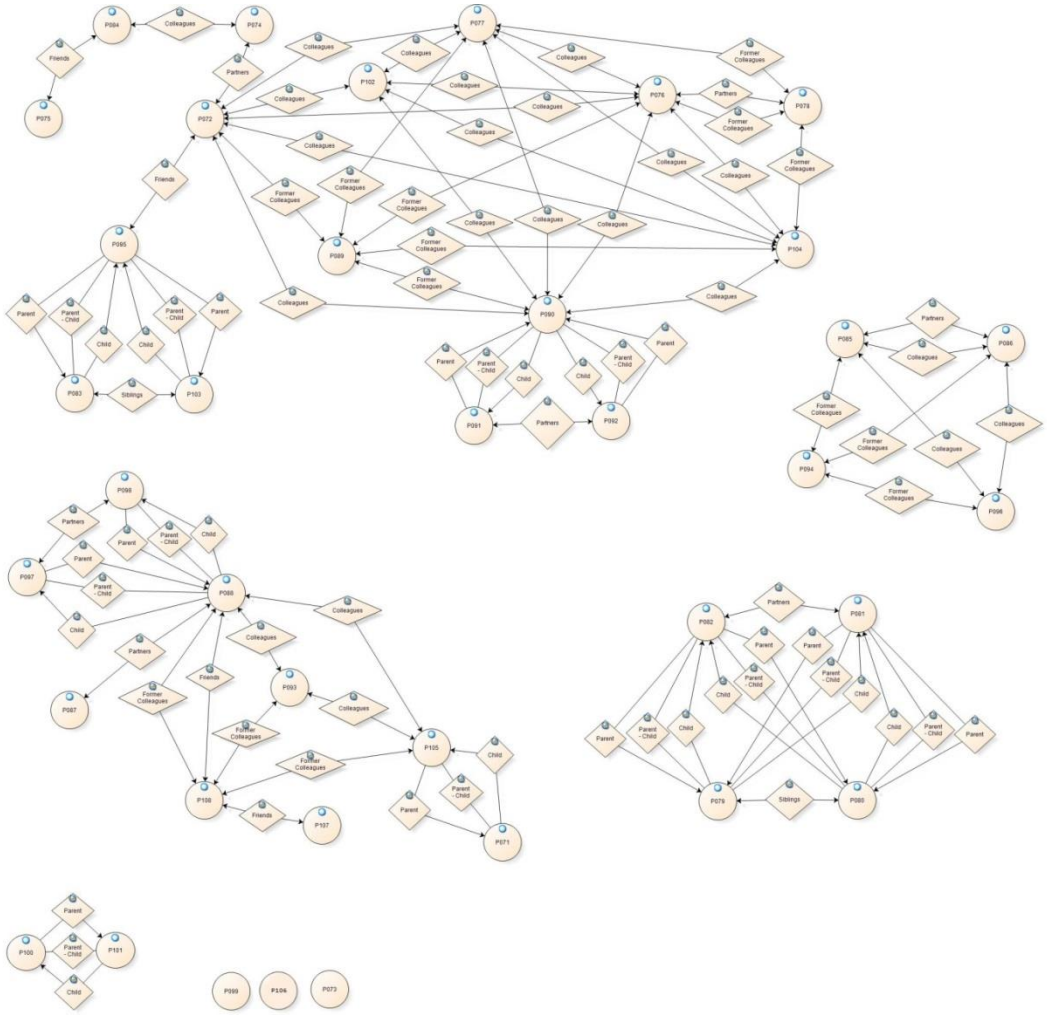

Figure A10.1: All relationships between study participants

Figure A10.1 shows the relationships between the research participants as network clusters. This figure shows the full set of five separate clusters of relationships of all the participants in relation to one another, as well as three participants who had no relationships with any other study participants (P73, P99 and P106), although P106 is a neighbour of P79, P80, P81 and P82, who are shown as Cluster C. Other participants had several sets of relationships including some with more than one relationship with another participant. Examples of this are where two participants are a parent and child or are partners and colleagues. The types of relationship are listed below.

- Parent
- Child
- Parent-child
- Sibling
- Partner
- Friend
- Colleague
- Former colleague

Each cluster contains all the participants who had a relationship with anyone in that cluster. Some of the participant groups had connections to more than one group, which is shown in Cluster A. The individual clusters are each shown in separate figures below for additional clarity and to show the relationships in more detail. The individual clusters are labelled according to the number of participants and relationships within the cluster, with Cluster A being the largest and Cluster E being the smallest. In the figures, circles represent individual participants within the study; lines show to whom they have a relationship, with directional arrows where appropriate; and the diamonds show the type of relationship.

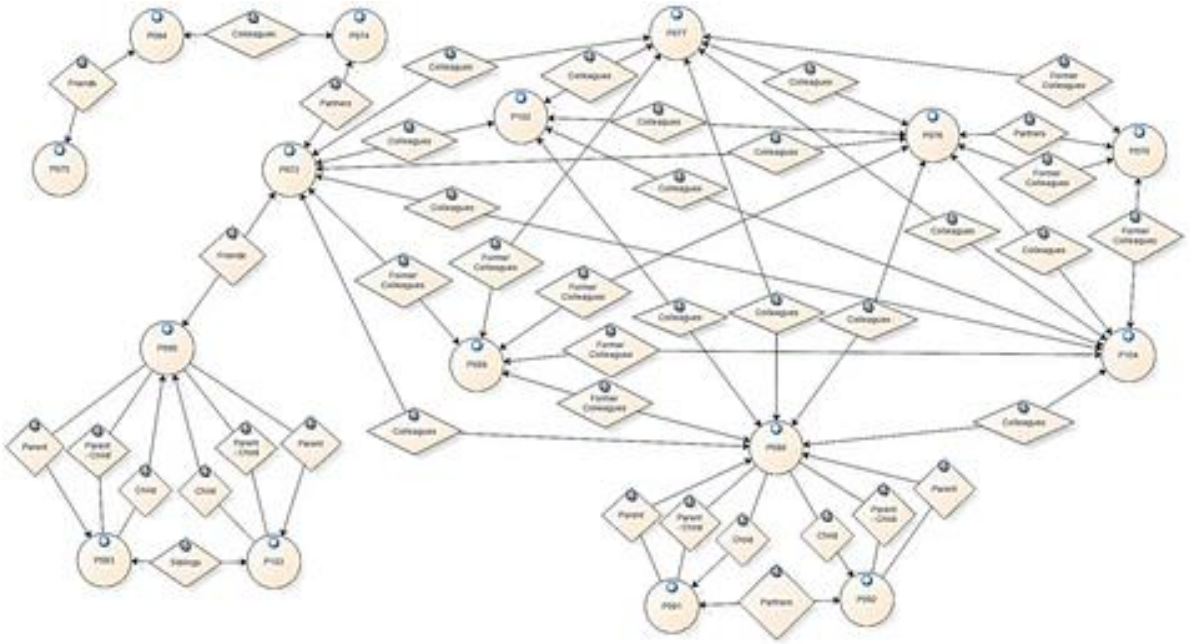

Figure A10.2: Cluster A relationships

Cluster A, as noted above, contained the largest volume of participants and relationships. This cluster contained the first interviewee, her partner and a selection of both of their colleagues, former colleagues and friends, as well as their partners, parents, children, colleagues, former colleagues and friends.

Some of the relationships only become apparent during the interview process – P75, who was known to the researcher via an independent group is part of this cluster as during her interview, she mentioned knowing and being influenced by P84, a friend not only of hers, but of P74. P107 could also have been included in Cluster A, as she is a distant colleague of several members of Cluster A, however, for the purposes of this research, as she was not personally known to or mentioned by any of the members of

Cluster A, she was placed in Cluster B as she has a friendship relationship with P108. (Adding P107's colleague relationships would have linked Clusters A and B together.)

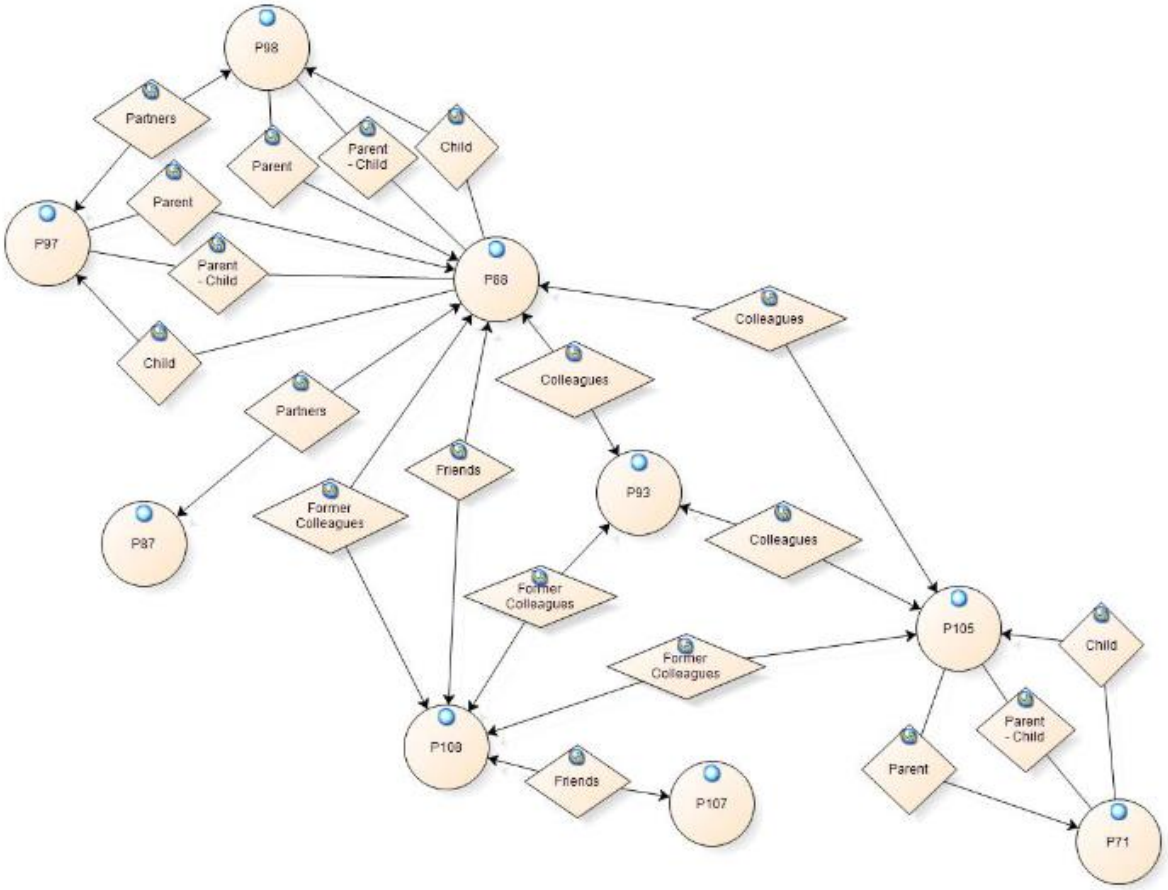

Figure A10.3: Cluster B relationships

Cluster B shows the relationships between one family and the colleagues, friends and former colleagues of one of the family members, P88. Within this cluster, all but two of the participants have a relationship with P88, the exceptions being P71, who is the child of P105 and P107, who is a friend of P108.

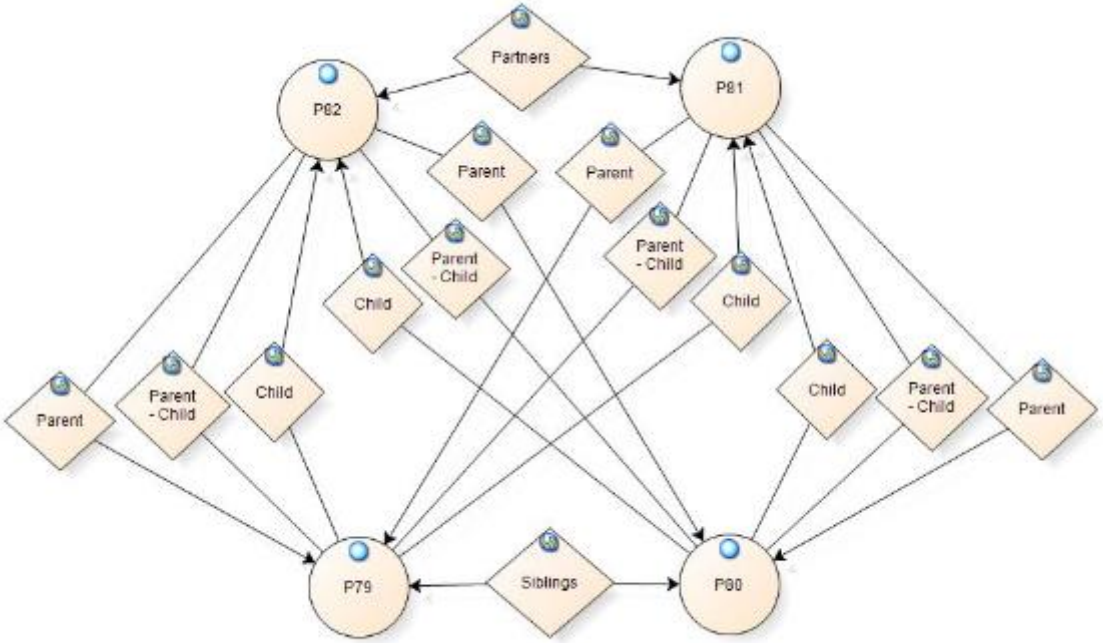

Figure A10.4: Cluster C relationships

Cluster C shows one family's relationships, with P81 and P82 who are partners and also the parents of siblings P79 and P80. This cluster shows clearly the number of different relationships that may exist between cluster members. As an example, P81 has a single relationship with her partner, P82, but has two relationships with each of her children, that of being the parent and a two-way,

parent-child relationship. Similarly, the children of the family each have two relationships with each parent; that of being the child and the two-way, parent-child relationship.

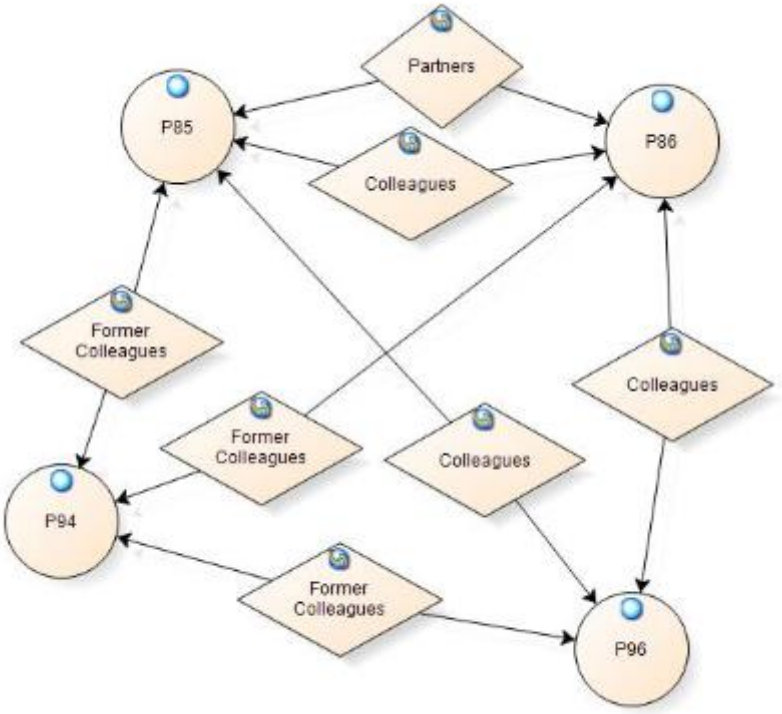

Figure A10.5: Cluster D relationships

Cluster D shows a set of work relationships, based around a small company owned and run by P85 and P86, who are also partners of one another. P94 no longer works for the company, but was considered influential and knowledgeable by both P86 and P96.

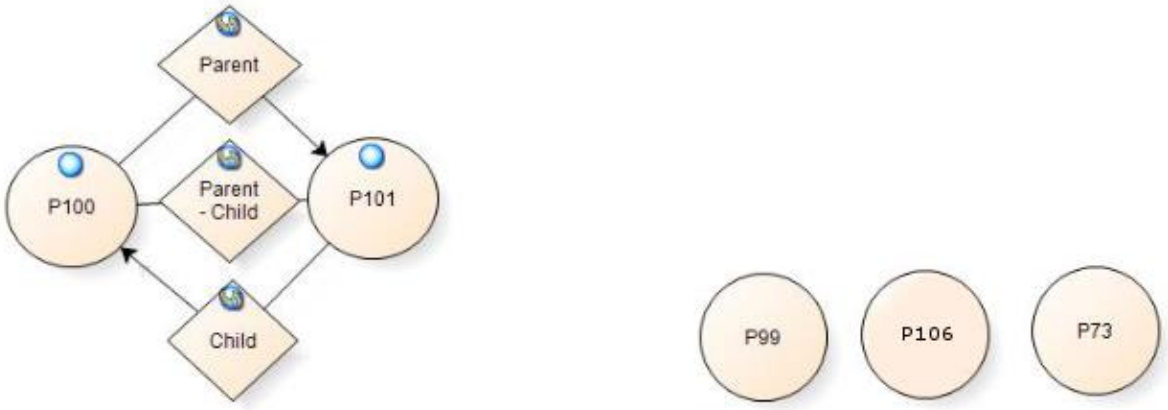

Figure A10.6: Cluster E relationships

Cluster E shows the three individuals with no affiliations to any other participants, as well as a small family relationship group containing P100 and P101. (P100, like P107, is also a distant colleague of several of the members of Cluster A, [and P107] and could have similarly linked Cluster E to Cluster A.)